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BOARD OF EDITORS { Mr. Horace E. Smith, Chief Clerk of Weather Bureau, Professors Henry A. Hazen, Thomas Russell, and Charles F. Marvin, and Mr. Edward B. Garriott, in charge of Review Room.

INTRODUCTION.

This REVIEW is based on reports for October, 1892, from 2,799 regular and voluntary observers. These reports are classified as follows: 164 reports from Weather Bureau stations; 45 reports from United States Army post surgeons; 1,920 monthly reports from state weather service and voluntary observers; 220 reports through the Central Pacific Railway Company; 419 marine reports through the co-operation of the Hydrographic Office, Navy Department; 31 reports from Canadian stations; marine reports through the "New York Herald Weather Service"; monthly reports from local services established in all states and territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR OCTOBER, 1892.

In the Atlantic coast states from New England to Florida and in parts of the Ohio and upper Mississippi valleys and Tennessee the month was the driest October on record. In many localities in the districts named serious inconvenience and suffering were caused by the failure of cisterns, wells, and streams. In Indian Territory excessive rainfall damaged cotton.

TEMPERATURE.

The month was warmer than usual, except in the middle and south Atlantic and Pacific coast states and in the middle Rocky Mountain and southern plateau regions. In the middle Missouri and Red River of the North valleys the month was the warmest October on record. The most important cold wave of the month advanced from the northeast slope of the Rocky Mountains to the south Atlantic and east Gulf states from the 21st to the 25th, carrying the frost line to the Gulf and south Atlantic states and northern Florida. From the 26th to the 28th the line of freezing weather extended to southern New Mexico, extreme northwestern Texas, and central Mississippi.

PRECIPITATION.

The monthly precipitation was deficient except in the middle and southern Rocky Mountain regions and the southwestern states. The most marked deficiency was noted in the middle Atlantic states and the Ohio Valley and Tennessee, where the monthly rainfall was 10 to 20 per cent. of the average amount for October. At Denver, Colo., the monthly precipitation was about five times greater than the average, and at Abilene, Tex., and Fort Smith, Ark., it was about double the usual amount for October. In the central Rocky Mountains the monthly snowfall was 20 to 40 inches. On the 11th and 12th a heavy snowstorm, with low temperature and high wind, interrupted travel and caused loss of life and stock in eastern Colorado. A notable feature of the month was a fall of .02 inch of rain from a cloudless sky at Eureka, Cal., the night of the 13th.

STORMS.

The most destructive storm of the month prevailed over the Great Lakes on the 28th and 29th. Many vessels were wrecked or damaged, and loss of life was reported. At Milwaukee, Wis., fire, driven by the high wind, destroyed property to the estimated value of $5,000,000. The local storms of the month were generally of slight intensity.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for October, 1892, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart II by isobars.

The normal pressure for October is highest over the south Atlantic and east Gulf states, the Ohio Valley and Tennessee, and Oregon, where it is above 30.10, and it is above 30.05 along the Atlantic coast from Florida to Nova Scotia, and in a belt extending thence over the middle and lower Mississippi valleys, and thence to the north Pacific coast. The normal pressure is lowest in the Saskatchewan and lower Saint Lawrence valleys, and over southern California and the lower Colorado valley, where it is below 30.00.

In October there is usually an increase of pressure over the United States. The greatest increase generally occurs from the lower Colorado valley over the middle plateau region, where the normal pressure is more than .10 higher than for September.

In October, 1892, the highest mean pressure was shown in two extensive areas bounded by isobars of 30.10, one of which covered the middle plateau region; the other included districts lying between the Ohio and middle Mississippi valleys and the south Atlantic coast. In a wide belt extending from the Atlantic coast between the 30th and 40th parallels to the Pacific coast between the 40th and 45th parallels the mean pressure was above 30.05. The mean pressure was lowest

over the Gulf of Saint Lawrence region, where it was below 29.80, and it was below 29.95 over the greater part of New England, in the middle Saskatchewan valley, and over southeastern California and western Arizona.

A comparison of the pressure chart for October with that of the preceding month shows an increase of pressure over the Rocky Mountain, plateau, and Pacific coast regions. There was also a slight increase in the upper Mississippi, lower Missouri, and Red River of the North valleys, and over the east Gulf states. From Texas over the middle Mississippi and Ohio valleys, the Lake region, and middle Atlantic and New England states the mean pressure was lower than for September. The greatest increase of pressure was noted over the central part of the middle plateau region, where it was .15, and the most marked decrease occurred over Nova Scotia, where it was more than .30.

The mean pressure was above the normal over interior districts and was below the normal along the Atlantic, Gulf, and Pacific coasts, over the lower lake region and the north part of the upper lake region, and in the eastern Saskatchewan valley. The greatest departure above the normal pressure was shown in Colorado and the western Saskatchewan valley, where it was .05, and the most marked departure below the normal appeared over the Canadian Maritime Provinces, where it was more than .20.

HIGH AND LOW AREAS.

The paths of areas of high and low barometric pressure over the United States and Canada for October, 1892, are shown on Charts IV and I, respectively, and some of the more prominent characteristics of the areas are given in the table at the end of this chapter.

HIGH AREAS.

The average velocity of high areas over the United States in October is about 23 statute miles per hour. They generally move from the British Northwest Territory or the north Pacific coast southeastward over the central valleys or the Lake region and pass thence eastward to the Atlantic coast.

In October, 1892, 11 high areas appeared, the average number traced for the corresponding month of the last 16 years being 7.6. Of the high areas traced for the current month 3 advanced from the north Pacific coast, 5 first appeared over the western Saskatchewan valley, 1 over Manitoba, 1 north of Lake Superior, and 1 north of the Lake region. Two of the Pacific coast high areas disappeared by a decrease of pressure over the middle plateau region, and 1 over Manitoba; 3 of the areas from the western Saskatchewan valley, the high area from Manitoba and those from north of the Great Lakes, reached the south Atlantic coast. Of the remaining 2 high areas from the Saskatchewan Valley, 1 disappeared over Manitoba and the other moved southeastward to the Gulf of Mexico. The general course of the high areas was southeastward; in 3 instances the tracks recurved slightly to the westward along the Atlantic coast. The following is a description of the high areas referred to:

I.—The month opened with an extensive area of high barometer overlying the central valleys and the Lake region, with highest pressure, 30.48, over eastern Lake Superior, and a temperature fall of 10° to 20° from the Lake region over New York and New England. The night of the 2d this high area was central over Virginia. On that date the temperature fell below freezing in eastern Ontario, a fall of 16° to 22° occurred in Virginia, and heavy frost was reported in the Catskill and Pennsylvania mountain regions. Moving southward the center passed off the south Atlantic coast by the evening of the 3d, with temperature below freezing in New Brunswick and eastern Quebec, and heavy frost generally throughout Virginia and Maryland.

II.—Occupied the north Pacific coast on the 1st. By the night of the 1st a 24-hour temperature fall of 15° to 20° occurred over southern Montana. During the 2d the high area moved to western Wyoming, with pressure above 30.20, a fall of 10° in temperature in South Dakota, and a minimum reading of 32° at Lander, Wyo. During the 3d the high area remained central over the middle Rocky Mountain region, with pressure above 30.30 at the morning report, and the temperature fell 10° over eastern Nebraska. During the 4th the center appeared to move slightly to the westward, and on the 5th this high area disappeared by a decrease of pressure over the middle plateau region.

III.—The morning of the 4th, when high area II occupied the middle Rocky Mountain region, the pressure was high from the middle plateau over the eastern Saskatchewan valley, and this high area was central over Manitoba, with pressure above 30.20. By the evening report low area II had extended its influence southeastward over the Missouri Valley and divided the area of high pressure, one part, high area II, retreating over Colorado, and the other, high area III, moving east of Manitoba. On that date the cooler weather over South Dakota and Nebraska, due to high area II, was carried over the Lake region and upper Ohio valley, where the temperature fell 10° to 18°. At Saint Vincent, Minn., the minimum temperature was 30°.

On the 5th this high area passed southeastward over Lower Michigan, the temperature fell 10° to 18° from the middle Mississippi valley to the middle Atlantic and south New England coasts, the temperature was 10° to 20° below the normal from the upper Ohio valley to New Jersey and western New England, the minimum temperature was 24° to 26° on the north shore of Lake Superior, and heavy frost was reported in northwestern Ohio. On the 6th the high area passed to the North Carolina coast, the temperature fell 10° to 12° over eastern Nova Scotia and on the Carolina coast, the minimum temperature was below freezing in the upper Ohio valley, and heavy frost was reported generally throughout Ohio and in eastern Lower Michigan.

IV.—Appeared north of Montana the morning of the 6th, with pressure above 30.20, and moved thence over eastern Montana by the evening report. On the 5th the temperature fell 10° to 15° in the Saskatchewan Valley and over the northern plateau region, and on the 6th there was a fall of 10° to 16° over the Dakotas, and the minimum temperature was below freezing in the western Saskatchewan valley. On the 7th the high area moved slowly eastward over the Dakotas, the temperature fell 10° to 20° from the middle-eastern slope of the Rocky Mountains over the upper lakes, and the minimum temperature was 24° at Valentine, Nebr., and Huron, S. Dak.

During the 8th the center passed southward to Kansas, with pressure rising above 30.30 at the morning report, the temperature fell 10° to 20° from Texas to western New York, the temperature was 10° to 17° below the normal from Arkansas to Ohio, and heavy frost was reported in north-central Kansas, Iowa, and east-central Minnesota. During the 9th the area moved to Oklahoma and thence to Tennessee, the temperature fell 10° to 14° along the immediate Atlantic coast from New York to Florida and on the west Gulf coast, and heavy frost was noted in northeastern Kansas, eastern Nebraska, northwestern Missouri, eastern Iowa, and central Illinois. On the 10th the center moved eastward off the Carolina coast, heavy frost was reported at Oswego, N. Y., and light frost at Albany, N. Y., Sandusky, Ohio, and Knoxville, Tenn.

V.—Appeared north of the Lake region on the 11th, moved southeastward over the middle Saint Lawrence valley and New England during the 12th, with pressure above 30.40, and passing thence west of south disappeared off the south Atlantic coast after the 15th. The advance of this high area was attended by a slight fall in temperature over the upper lakes and northern New England on the 11th, along the im-

mediate middle Atlantic and New England coasts on the 12th, from Pennsylvania to Florida on the 13th, over the Florida Peninsula on the 14th, and along the immediate Gulf coast on the 15th.

VI.—Appeared off the Oregon coast on the 11th, with pressure above 30.30. On that date the temperature fell 10° to 20° over the middle and northern plateau regions, and the temperature was 10° to 20° below the normal over the middle plateau. During the 12th the center moved southeastward over the middle plateau, with pressure above 30.40 at the morning report, and the temperature fell 20° to 30° on the middle-eastern slope of the Rocky Mountains. By the evening of the 13th the high area had moved over the eastern part of the middle plateau, the temperature had fallen slightly from the middle Missouri valley to Texas, and heavy frost was noted at Salt Lake City, Utah. On the 14th the high area remained over the middle Rocky Mountain region, the temperature fell 10° to 18° from east-central Texas to southwestern Arkansas, and the minimum temperature was below freezing from the Saskatchewan Valley over Wyoming. By the morning of the 15th this high area had disappeared by an increase of pressure over the middle Rocky Mountain region.

VII.—Appeared over the western Saskatchewan valley on the 14th, with pressure above 30.10. On that date a slight fall in temperature occurred in the Red River of the North and upper Mississippi valleys. During the 15th the high area moved south of east over Manitoba, and the temperature fell slightly in the western lake region and lower Ohio valley. During the 16th the center moved eastward north of Lake Superior, with pressure above 30.30, and the temperature fell 10° to 20° over the Lake region. Passing to the middle Saint Lawrence valley during the 17th, with a temperature fall of 10° in northern New England and Virginia, the high area moved thence southward over New England and thence to the south Atlantic states, where it apparently disappeared by a decrease of pressure during the night of the 18th.

VIII.—Appeared off the middle Pacific coast on the 17th, with pressure above 30.20. In conjunction with high area VII this high area caused a marked fall in temperature over the Rocky Mountain and plateau regions and along the Pacific coast from the 13th to 16th. On the 17th the temperature fell 20° to 30° from Colorado to South Dakota, and a minimum temperature of 8° was noted at Calgary, Alberta. During the 18th the center passed slowly northward off the north Pacific coast, with pressure above 30.30 at the evening report, and the pressure was high thence to the southeast slope of the Rocky Mountains, the temperature fell 10° to 20° from northwestern Texas to the upper Mississippi valley, and light frost was reported in western Kansas.

On the 19th the center remained nearly stationary over Washington, the temperature fell 10° to 12° from western Tennessee to the lower lakes, and the minimum temperature was 20° at Saint Vincent, Minn. By the evening of the 20th the high area had advanced to Wyoming. On that date a slight fall in temperature occurred in the middle Mississippi and lower Missouri valleys. During the 21st the high area remained nearly stationary over Wyoming, and by the morning of the 22d it had united with high area IX, which had advanced southeastward from the western Saskatchewan valley.

IX.—Appeared over Alberta the morning of the 21st, with pressure above 30.30, and moved thence slowly eastward north of Montana by the evening report. On that date the temperature fell 10° to 16° on the northeast slope of the Rocky Mountains, and the minimum temperature was below freezing over the middle and northern Rocky Mountain and plateau regions. During the 22d the center advanced to South Dakota, the temperature fell more than 10° from New Mexico to the western lake region, and a minimum of 14° was noted at Fort Buford, N. Dak. On the 23d the high area moved slowly northeastward over Minnesota, and the line of freezing weather extended to northern Missouri. During the 24th the path of the center recurved to the northwest over Manitoba, with pressure above 30.50 at the morning report, and this high area apparently united with high area X which occupied the western Saskatchewan valley. On that date the line of freezing weather extended to central Ohio and West Virginia, and heavy frost and temperature below freezing were reported in New Mexico.

X.—The morning of the 25th the center of this high area occupied the northeast slope of the Rocky Mountains, with pressure rising to 30.60 at Medicine Hat, N. W. T., and by the evening report it had passed to Wyoming. On that date a slight fall in temperature occurred in the lower Missouri valley, the minimum temperature was below 32° in southern Kansas and southern Missouri, and frost was reported in various parts of northern Texas, northern Louisiana, Arkansas, Tennessee, and Missouri. On the 26th the center remained nearly stationary over the middle Rocky Mountain region, a slight fall in temperature occurred from the middle Mississippi valley to the middle Gulf coast, and frost was reported in the Southern States from Louisiana to northern Florida. On the 27th the high area passed to southeastern New Mexico, the temperature fell slightly from the east Gulf coast to the upper Ohio valley, the line of freezing weather extended to northern Arkansas, and frost was reported in parts of Louisiana and Kentucky. During the 28th the high area advanced over the Gulf of Mexico, the temperature fell slightly over the Florida Peninsula, the line of freezing weather reached the northern part of the east Gulf states, and heavy frost was noted throughout Tennessee.

XI.—Appeared over Alberta during the 27th, with pressure above 30.20. On that date a marked fall in temperature occurred from the western Saskatchewan valley over the plateau and Pacific coast regions, and the minimum temperature fell to 24° at Winnemucca, Nev. By the night of the 28th the center advanced to northern North Dakota, with pressure above 30.50 at the morning report, the temperature fell 10° to 26° in the Northwest, and a minimum temperature of 28° was noted at Tucson, Ariz. On the 29th the high area moved to the middle Mississippi valley, the temperature fell more than 10° from the Ohio Valley to New Mexico, the line of freezing weather extended to southern Kansas, and heavy frost occurred on the middle-eastern slope of the Rocky Mountains. On the 30th the center advanced to the middle Alleghany Mountain region, the temperature fell more than 10° along the immediate Atlantic coast from Maryland to Florida, and the line of freezing weather reached eastern Tennessee. On the 31st this high area passed off the North Carolina coast, the line of freezing weather reached northern Georgia, and the first heavy frost of the season was reported at Augusta, Ga.

LOW AREAS.

The average velocity of October areas of low barometric pressure over the United States is 30 statute miles per hour. The principal track of the low areas of that month lies along the northern border of the country from the Rocky Mountains to the 100th meridian and thence over the Great Lakes and Saint Lawrence Valley. A less frequented course is from the middle plateau to the Lake region and thence eastward, and low areas of marked strength averaging about one per month pass up the south and middle Atlantic coasts. Tracings for October of preceding years show that an average of about one low area per month crosses the Pacific coast and Rocky Mountain ranges and traverses the continent.

The paths of 10 low areas are plotted on Chart I for October, 1892, the average number traced for the corresponding month of the last 16 years being 10.9. Of the low areas

traced for the current month 2 advanced from the Pacific Ocean, 5 appeared over the Saskatchewan Valley, 2 apparently developed over the middle plateau region, and 1 recurved eastward over the north part of the Gulf of Mexico. One of the Pacific low areas reached the Gulf of Saint Lawrence; the other disappeared by an increase of pressure over Manitoba. All of the low areas from the British Northwest Territory moved eastward to the Gulf of Saint Lawrence. One of the low areas from the middle plateau region advanced to the Gulf of Saint Lawrence; the other occupied the middle Mississippi valley at the close of the month. The low area from the Gulf of Mexico crossed the Florida Peninsula and moved thence northeastward over the Atlantic Ocean. The average velocity of the low areas was about 3 miles per hour less than the average velocity of low areas traced for October of preceding years. The following is a description of the low areas traced for October, 1892:

I.—Appeared north of Montana on the 1st, with pressure 29.70. On that date the temperature rose 10° to 16° and was 20° to 30° above the normal over the Dakotas, the maximum temperature was 90° to 98° in South Dakota, and rain fell on the northeast slope of the Rocky Mountains. During the 2d the center of disturbance passed to the region north of Lake Superior, the temperature rose 10° to 20° in Manitoba, the maximum temperature was 80° to 88° in the lower Missouri and middle Mississippi valleys, rain fell in the upper lake region, and thunderstorms occurred in the morning in Upper Michigan. On the 3d the center moved north of the eastern lake region, the temperature rose 10° to 20° in the middle Atlantic states, the maximum temperature was 82° to 86° in the middle Mississippi and Ohio valleys, rain fell from the Lake region over New England, and thunderstorms occurred in the evening in northern Ohio.

By the morning of the 4th the low area had passed southeastward to the Maine coast, avoiding the lower temperature which obtained over and north of the Gulf of Saint Lawrence, and by the evening report was central over Nova Scotia. On that date rain fell in areas from the Great Lakes to the Atlantic coast north of the 35th parallel, and heavy thunderstorms occurred along the North Carolina coast. During the 5th the storm-center moved slowly northeastward over the Gulf of Saint Lawrence, with a marked increase in energy, and rain fell from the eastern lake region to the middle Atlantic and New England coasts. The morning of the 6th the low area was apparently central over the north part of the Gulf of Saint Lawrence, with pressure below 29.20, and by the evening report it had passed northeastward beyond the region of observation.

II.—Appeared over northern Alberta the evening of the 4th, with pressure below 29.70. During the 5th the center moved eastward over the Saskatchewan Valley, the temperature rose 10° to 20° in Manitoba, and the maximum temperature was 86° to 88° in the Dakotas and Kansas. On the 6th the low area moved southeastward to Lake Superior, with pressure 29.50, a marked rise in temperature occurred over the Great Lakes, the Ohio Valley, Pennsylvania, and New York, and light rain fell in western South Dakota. On the 7th the center passed to Georgian Bay, with pressure below 29.50, the temperature rose in the Atlantic coast states north of Florida, thunderstorms were noted in the middle Ohio valley, rain fell generally throughout the Lake region and middle and upper Ohio valleys, and severe northwest gales prevailed over Lake Superior. During the 8th the low area advanced to New England, rain fell generally east of the Mississippi River, high winds prevailed in the morning over Lakes Michigan and Huron, and severe thunderstorms occurred in Maryland in the evening. On the 9th the center passed south and east of Nova Scotia, and rain was followed by clearing weather in the Atlantic coast states.

III.—Approached from the Pacific Ocean and the evening of the 8th was apparently central off the mouth of the Columbia River, with pressure below 29.60. On that date the temperature rose slightly in the Northwest, high winds and heavy rain prevailed along the middle and north Pacific coasts, and the wind reached a velocity of 51 miles per hour from the southeast at Tatoosh Island, Wash. On the 9th the center advanced to Alberta, with pressure 29.50, the temperature rose slightly on the eastern slope of the Rocky Mountains, rain fell in areas in the middle and north Pacific coast and middle and northern plateau regions and in western Montana, and a wind velocity of 64 miles per hour from the southeast was reported at Fort Canby, Wash.

On the 10th the center passed southeastward to South Dakota, and at the evening report a trough of low pressure extended from the middle Missouri valley to Alberta, with two areas of lower pressure, one over Alberta and the other over South Dakota. On that date the temperature rose 10° to 15° in the Lake region, and rain fell in areas in the middle and northern Rocky Mountain regions. During the 11th the low area occupied the middle Missouri valley, and at the evening report a trough of low pressure extended from Manitoba to New Mexico, with pressure below 29.50 over South Dakota. On that date the temperature rose slightly in the middle and south Atlantic states, rain fell in the middle and northern Rocky Mountain regions and in areas in the Lake region, and high northwest wind and heavy snow were reported in the middle Rocky Mountain region.

On the 12th the center of disturbance occupied Kansas, a slight rise in temperature occurred over the Gulf States, rain fell from the Red River of the North Valley to Colorado and Oklahoma, high northwest winds and snow were reported in eastern Colorado, and wind velocities of 72 miles per hour from the southwest and 64 miles per hour from the northwest were noted at Amarillo, Tex., and Pueblo, Colo., respectively. During the 13th the center moved northward to South Dakota, rain fell in the Missouri Valley, the middle Rocky Mountain region, and on the west Gulf coast, and thunder, rain, and hail storms were reported in the lower Missouri valley. On the 14th the low area advanced to the Red River of the North Valley, rain fell from Manitoba to the west Gulf coast, and a general and slight rise in temperature occurred east of the Mississippi River. During the 15th the center moved eastward north of the Lake region, the temperature rose slightly from the lower lakes to the Gulf of Mexico, and rain fell in the Lake region and Ohio Valley. By the morning of the 16th the center of disturbance had reached the lower Saint Lawrence valley. On that date rain was followed by clearing weather from the lower lakes and upper Ohio valley to the New Jersey and New England coasts, and severe thunderstorms occurred in southern New England.

IV.—Appeared on the north Pacific coast the morning of the 10th, with pressure below 29.80, and by the evening report had advanced to Alberta with central pressure below 29.40. On that date the temperature rose slightly over the middle plateau, rain fell from the north Pacific coast over the middle and northern Rocky Mountain regions, and the wind reached a velocity of 72 miles per hour from the southwest at Fort Canby, Wash. During the 11th the center moved slowly eastward over the Saskatchewan Valley, and on the 12th passed southward and united with low area III which occupied the eastern slope of the Rocky Mountains.

V.—Apparently developed over the middle plateau region and the morning of the 15th the center occupied northern Utah, with pressure below 29.70. By the evening of the 15th the center had reached southeastern Montana, the temperature had risen 6° to 14° from the Mississippi River to the Rocky Mountains, and rain had fallen from the middle and north Pacific coast states over the northeast slope of the

Rocky Mountains. The evening of the 15th a trough of low pressure extended from Manitoba to New Mexico with two cyclonic centers, one over North Dakota and the other over northern Colorado. On that date the temperature rose slightly in the central valleys, rain fell in small areas in the Rocky Mountain regions and the Red River of the North Valley, and high winds were reported from the Missouri River to the Rocky Mountains, a velocity of 88 miles per hour from the southwest being noted at Pikes Peak, Colo.

During the 17th the center moved northeastward over Manitoba, with pressure below 29.10 at the morning report, when a very steep barometric gradient was shown to the eastward and between this low area and high area VII. On that date the temperature rose 10° over the western lake region, light rain fell from the middle Missouri valley to Manitoba, snow was reported in the Saskatchewan Valley, and south to southeast gales occurred in the middle Missouri and Red River of the North valleys. On the 18th the low area moved north of Lake Superior, the temperature rose 10° to 20° in the Ohio Valley and the lower lake region, and rain fell from the Southwestern States over the western and northern lake regions. On the 19th the center moved rapidly south of east and reached the Gulf of Saint Lawrence, the temperature rose 10° to 12° along the middle Atlantic and New England coasts, and rain was followed by clearing weather from the Ohio Valley over the middle Atlantic and New England states.

VI.—Was central over the eastern Saskatchewan valley the evening of the 20th, with pressure below 29.60. During the 21st the center passed south of east over Manitoba, the temperature fell slightly from the upper Mississippi valley over the upper lakes, and heavy rain fell in the Southwest. During the 22d the low area moved rapidly south of east and reached the Gulf of Saint Lawrence, the temperature rose slightly in the middle Atlantic and New England states, rain fell in a belt from New Mexico to the middle Atlantic coast, and high northwest winds were encountered off the south New England coast.

VII.—A dispatch from Habana, Cuba, dated 10.10 p. m., 21st, stated that a cyclonic disturbance increasing in energy was recurving southwest of that place and would cross western Cuba. The presence of this low area over the Gulf of Mexico was indicated by reports of the 22d. On that date heavy rain fell on the middle Gulf coast, and a wind velocity of 50 miles per hour from the northeast was reported at New Orleans, La. During the 23d the low area recurved north and east off the middle Gulf coast, and the rain area extended northeastward to the middle Atlantic coast. On the 24th the center of disturbance moved eastward over the Florida Peninsula, with heavy rain in eastern Florida and along the Georgia and South Carolina coasts, after which it apparently moved northeastward off the Atlantic coast, attended by high wind and heavy rain, reaching the New England coast the evening of the 26th and the lower Saint Lawrence valley the morning of the 27th.

VIII.—Appeared over Manitoba the evening of the 26th, and by the evening of the 27th had advanced to the region north of the lower lakes, with pressure below 29.70, and rain over the northern lakes and in the Saint Lawrence Valley. During the 28th the center passed eastward north of the Gulf of Saint Lawrence.

IX.—Appeared over Manitoba the evening of the 27th, with pressure below 29.70, and during the 28th advanced over the upper lake region, with pressure below 29.30. On the latter-named date unusually severe gales prevailed over the Great Lakes; these gales continued during the 29th, and were attended by considerable loss of shipping. At points on Lakes Michigan, Huron, and Erie the wind velocity exceeded 50 miles per hour, and at Cleveland, Ohio, a velocity of 60 miles per hour from the northwest was recorded on the 29th. The temperature rose 10° to 20° in the middle Mississippi and Ohio valleys on the 28th, and 10° to 12° on the south Atlantic coast on the 29th. On the 28th the rain area was confined to the Lake region, and on the 29th it extended over the middle Atlantic and New England states, and thunderstorms were reported in parts of New England. On the 30th the center moved north of east over Nova Scotia.

X.—Appeared over western Kansas the evening of the 30th, with pressure below 29.90. On that date the temperature rose 10° to 14° in the middle Mississippi valley, snow fell in the middle Rocky Mountain region, and rain was reported from the middle-eastern slope of the Rocky Mountains to western Iowa and western Missouri. During the 31st the center moved eastward to the lower Missouri valley, with pressure below 29.80, a marked rise in temperature occurred east of the middle and lower Mississippi rivers, and the rain area extended from the Mississippi Valley over the Lake region.

Tabulated statement showing principal characteristics of areas of high and low pressure.

Barometer.	First observed.			Last observed.		Duration.	Velocity per hour.	Maximum pressure change in 12 hours, maximum abnormal temperature change in 12 hours, and maximum wind velocity.								
	Date.	Lat. N.	Long. W.	Lat. N.	Long. W.			Station.	Rise.	Date.	Station.	Fall.	Date.	Station.	Direction.	Miles per hour.	Date.
High areas.		°	°	°	°	*Days.*	*Miles.*		*Inch.*			°					
I	1	48	85	34	81	1·5	33	Rockliffe, Ont	·46	1	Marquette, Mich	23	1	Chicago, Ill	n.	46	1
II	1	46	120	40	107	3·0	17	Calgary, N. W. T	·40	2	Montrose, Colo	19	2	Fort Canby, Wash	s.	36	1
III	4	52	97	35	77	2·5	27	Block Island, R. I	·32	5	Hatteras, N. C	17	6	Hatteras, N. C	n.	36	6
IV	6	51	110	36	83	4·0	25	White River, Ont	·38	7	Havre, Mont	27	6	Amarillo, Tex	ne.	32	7
V	11	48	77	33	80	4·0	17	Northfield, Vt	·26	11	Cincinnati, Ohio	11	11	Block Island, R. I	ne.	36	12
VI	12	46	118	41	105	2·5	18	Helena, Mont	·36	11	Montrose, Colo	25	11	Helena, Mont	sw.	30	12
VII	14	53	113	34	82	4·5	28	Father Point, Quebec	·34	16	Rockliffe, Ont	18	16	Block Island, R. I	ne.	38	17
VIII	17	39	125	52	100	7·5	17	Pueblo, Colo	·20	20	Duluth, Minn	19	22	Eureka, Cal	n.	30	18
IX	21	51	114	34	102	3·5	21	Medicine Hat, N. W. T	·54	21	Havre, Mont	17	21	Amarillo, Tex	n.	36	22
X	25	51	113	28	88	3·5	30	do	·18	25	Dodge City, Kans	14	27	do	n.	36	26
XI	27	53	115	36	75	3·5	31	Rockliffe, Ont	·60	30	{Havre, Mont {Springfield, Mo	21 21	28 29	Kearney, Nebr	nw.	42	28
Mean						3·7	24		·37			19				36	
Low areas.									Fall.			Rise.					
I	1	53	109	49	62	4·5	24	Boston, Mass	·42	3	Rapid City, S. Dak	22	1	Hatteras, N. C	w.	44	5
II	4	53	115	46	58	5·0	25	Marquette, Mich	·38	6	Bismarck, N. Dak	21	5	Chicago, Ill	s.	40	6
III	8	46	126	50	68	7·5	26	Pueblo, Colo	·34	11	Yankton, S. Dak	23	9	Amarillo, Tex	sw.	72	13
IV	10	50	125	50	98	2·0	26	Winnemucca, Nev	·30	10	Huron, S. Dak	18	11	Fort Canby, Wash	s.	72	10
V	15	40	113	47	63	4·5	27	Winnipeg, Man	·54	17	Cleveland, Ohio	20	18	*Huron, S. Dak	se.	52	17
VI	20	54	107	48	81	1·5	31	Swift Current, N. W. T	·26	20	Duluth, Minn	15	21	Bismarck, N. Dak	nw.	34	21
VII	23	28	90	28	79	1·5	20	Mobile, Ala	·12	22	New Orleans, La	8	23	New Orleans, La	ne.	50	22
VIII	26	53	98	51	66	1·5	42	Minnedosa, Man	·30	26	Fort Buford, N. Dak	15	26	Kearney, Nebr	n.	30	26
IX	27	53	100	47	59	3·0	32	Port Huron, Mich	·44	28	Louisville, Ky	27	28	Cleveland, Ohio	nw.	60	29
X	30	38	100	40	93	1·0	17	Sandusky, Ohio	·26	31	Chattanooga, Tenn	22	31	Amarillo, Tex	s.	36	30
Mean						3·2	27		·34			19				49	

*Pikes Peak, Colo., sw., 88, 16th.

NORTH ATLANTIC STORMS FOR OCTOBER, 1892.

[Pressure in inches and millimeters; wind-force by Beaufort scale.]

The paths of storms that appeared over the west part of the north Atlantic Ocean during October, 1892, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

October usually marks the commencement of the stormy season in the middle latitudes of the north Atlantic. There is a general decrease of atmospheric pressure over the ocean, save from the British Isles over the northern ocean between Iceland and the Norwegian coast, the Iceland low area extends southward with a decrease of central pressure, and storms from the west part of the north Atlantic and from the American continent have a comparatively unobstructed path to the middle and north coasts of Europe. Reports of preceding years show that an average of two storms per month traverse the north Atlantic from America to Europe in October, and that their average rate of advance in that month is 21 statute miles per hour. Storms of tropical origin are not uncommon in October. The West India cyclones of that month generally appear over the Caribbean Sea and recurve over or near extreme western Cuba. October storms of this class have averaged about one in 2 years.

Generally unsettled weather prevailed over the north Atlantic during October, 1892. Over the British Isles the month was cold and wet. Over mid-ocean severe and persistent storms were encountered during the second and third decades of the month. Over the western part of the ocean there was a succession of storms of marked energy, an unusual number of which were of tropical or sub-tropical origin.

The month opened with generally stormy weather from coast to coast. Low area VIII for September, 1892, occupied the region northeast of the Grand Banks, the pressure was low over the Gulf of Saint Lawrence, a storm was apparently developing east of the Bahamas, and the barometer was low over the British Isles. On the 2d the September low area VIII had apparently recurved westward and united with the low area from the Gulf of Saint Lawrence, the storm from the vicinity of the Bahamas had moved northeastward to a position south of Bermuda, and the pressure continued low over the eastern part of the ocean. The morning of the 3d the low areas over the western part of the ocean had apparently united south of Newfoundland, where pressure below 29.50 (749) and northwest gales of force 9 to 10 were reported. By the morning of the 4th this storm had apparently recurved westward and joined low area I on the New England coast. During the next two days this storm occupied the Gulf of Saint Lawrence, with pressure below 29.20 (742) on the 6th, after which it moved northeastward over Labrador.

A storm of marked strength moved westward along the Venezuela coast of the Caribbean Sea from the 6th to the 8th, and apparently passed thence westward to Honduras by the 11th, and possibly to the Mexican coast by the 15th. On the 7th very heavy rain fell on the Island of Trinidad, with high west winds, which shifted to southeast and increased to a a gale at 4.15 p. m.; 5 lighters were sunk; streams overflowed their banks, causing a suspension of railroad traffic and doing considerable damage to property. At La Guayra the storm was very severe the afternoon of the 7th; vessels were obliged to leave port on account of the tremendous seas. On the 8th the wind was very strong from the east, with rough sea at Curacao Island. On October 11th a severe hurricane of short duration struck the Bay Islands off the north coast of Honduras, causing serious damage to plantations, buildings, and shipping. The schooner "Stranger" went down off Cape Gracias, with a loss of 16 passengers. On the 15th a destructive storm was reported along the Mexican coast; vessels in the port of Vera Cruz dragged anchor, and many buildings were destroyed.

On the 9th low area II passed south of Nova Scotia, thence northeastward over Newfoundland by the 10th, and reached mid-ocean in high latitudes on the 11th. Over the British Isles the pressure continued low during the first decade of the month, with gales of considerable force and copious rains. From the 11th to the 13th the pressure was low north of Newfoundland and the Grand Banks. This low area moved to mid-ocean where it remained nearly stationary from the 14th to the 17th, with pressure below 29.30 (744) and northerly gales of force 9 to 10 on the 16th, after which it recurved westward and united with a storm from the southwest.

Reports of the 13th indicated the development of a storm of marked energy east of the Bahamas, and in the afternoon gales of hurricane force were encountered between Bermuda and the Bahamas. On the 14th this storm was central south of Bermuda, and pressure below 29.70 (754) and north-northeast gales of force 9 were reported in that region. During the 15th, 16th, and 17th the storm pursued a slow northeasterly course and on the 17th was central east of Bermuda. About 3 p. m. of that date a tornado passed across the eastern part of Saint Georges Island, Bermuda. The disturbed surface of the sea clearly indicated the track of the tornado as it approached the island. This storm was not felt at Hamilton.

By the morning of the 18th the low area had reached a position off the southeast edge of the Grand Banks, and by the morning of the 19th was central off the northeast edge of the Grand Banks. During the 20th this storm united over the Banks of Newfoundland with low area V. On that date the barometer fell below 29.00 (736), and gales of force 9 to 11 were reported east of Newfoundland. From the 20th to the 24th the pressure continued low in the region of Newfoundland and the Grand Banks. By the 25th the storm-center had advanced to mid-ocean where it remained nearly stationary during the 26th, with very low pressure, a reading of 28.20 (716) being noted by the steamship "Pennsylvania," in N. 50° 33′, W. 29° 03′ on the 26th, with gales of force 8 to 10. This storm apparently reached the British Isles on the 28th.

From the 14th to the 16th a storm of considerable strength was apparently central south of the British Isles. The rains of this period were very heavy in the eastern counties of England. In York the greatest flood in 60 years occurred along the River Ouse; upwards of 500 houses were damaged. On the 25th low area VII was central north of the Bahamas, with pressure below 29.70 (754). By the morning of the 26th the storm had moved northeastward between the Carolina coast and Bermuda, and the morning of the 27th was central on the southwest edge of the Banks of Newfoundland. By the morning of the 28th the center of disturbance had apparently moved northwestward and united with low area VIII which moved eastward north of the Gulf of Saint Lawrence. On that date a new development appeared between Bermuda and the Carolina coast and moved rapidly northeastward to eastern Nova Scotia by the morning of the 29th, with pressure 29.30 (744) and gales of force 9 to 12, and by the 30th had advanced north of the Banks of Newfoundland, where it was central at the close of the month with pressure below 29.20 (742) and strong gales east of Newfoundland.

OCEAN ICE IN OCTOBER.

The following table shows the southern and eastern limits

of the region within which icebergs or field ice were reported for October during the last 10 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
October, 1883	46 56	46 22	October, 1883	46 56	42 22
October, 1884	Off Cape	Race	October, 1884	46 56	50 55
October, 1885	48 21	47 12	October, 1885	48 21	47 12
October, 1886	41 34	49 43	October, 1886	46 03	46 37
October, 1887	42 58	50 02	October, 1887	42 58	50 02
October, 1888	51 43	55 36	October, 1888	51 43	55 36
October, 1889	44 32	49 28	October, 1889	46 30	45 59
October, 1890	44 47	49 33	October, 1890	47 56	45 45
October, 1891	48 04	48 27	October, 1891	48 04	48 27
October, 1892	Straits of	Belle Isle	October, 1892	52 34	51 09
Mean	46 41	50 40	Mean	47 48	48 49

Ice was not reported south of the 50th parallel. In an area extending from the Straits of Belle Isle to the 51st meridian ice was reported on the 1st, 5–9th, 16th, 18th, 22d, and 27th. The southern limit of ice was nearly 5° north and the eastern limit was about 5° west of the average southern and eastern limits of ice for October. The quantity of ice was notably deficient when compared with the average amount reported for October of preceding years. The region within which icebergs or field ice were reported for the current month is shown on Chart I by ruled shading.

OCEAN FOG IN OCTOBER.

The limits of fog belts west of the 40th meridian, as determined by reports of shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 9 dates; between the 55th and 65th meridians on 3 dates; and west of the 65th meridian on 2 dates. Compared with the corresponding month of the last 5 years the dates of occurrence of fog near the Grand Banks numbered 4 less than the average; west of the 55th meridian the number of foggy days corresponded with the average. The fog noted west of the 40th meridian, and at stations of the Weather Bureau on the middle Atlantic and New England coasts, generally attended the advance from the interior of areas of low barometric pressure.

TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for October, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest in the Colorado Desert, California, and over the southern extremity of Florida, where it was above 75, and the mean values were about 70 generally over the Florida Peninsula, at points along the immediate middle Gulf coast, over the southern half of eastern Texas, and in southeastern California and western Arizona. Over the Gulf States and in the central valleys of California the mean readings were above 60. The mean temperature was lowest in the eastern Saskatchewan valley, in the mountains of central Colorado, on the north shore of Lake Superior, and in the lower Saint Lawrence valley, where it was below 40, and the mean temperature was below 50 north of a line traced from the central New England coast westward over the Lake region to western South Dakota, thence southward to central New Mexico, thence to the Sierra Nevada Mountain range in eastern California, and east of this line traced from northeastern California over eastern Oregon and eastern Washington.

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was above the normal, except in Nova Scotia, and from the lower lake region to the east Gulf and south and middle Atlantic coasts, over the southern plateau and a part of the middle plateau region, and along the Pacific coast south of the Columbia River. The greatest departure above the normal temperature was shown from the middle Missouri valley over Manitoba, where it exceeded 5, and the most marked departure below the normal temperature was noted along the immediate Atlantic coast from Virginia to northern Florida, where it was more than 2.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for October for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for October, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for October, during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Oct.	(2) Length of record.	(3) Mean for Oct., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for October.			
					Highest.	Year.	Lowest.	Year.
Arizona.	°	Years	°	°	°		°	
Fort Apache	56.0	20	53.6	− 2.4	60.0	1875	50.6	1883
Fort Mohave	73.0	20	71.3[f]	− 1.7	80.0	1875	68.5	1886
Whipple Barracks	55.0	21	54.0	− 1.0	62.2	1875	49.9	1883
Arkansas.								
Keesees Ferry	60.1	10	60.9	+ 0.8	64.0	1881	56.0	1885
California.								
Fort Bidwell	51.3	20	48.6	− 2.7	59.2	1875	45.1	1873
Riverside	64.0	10	.....	.....	67.2	1885	60.7	1886
Colorado.								
Las Animas	53.0	9	50.0	− 3.0	57.1	1889	49.4	1883
Florida.								
Merritts Island	75.4	10	73.8	− 1.6	79.0	1882	72.9	1891
Georgia.								
Forsyth	66.9	18	68.0	+ 1.1	75.4	1884	61.7	1885
Idaho.								
Boise Barracks	50.0	18	51.2	+ 1.2	56.9	1872	44.5	1883
Fort Sherman	46.4	9	49.8	+ 3.4	50.8	1889	41.2	1883
Illinois.								
Centralia	52.8	9	.....	.....	61.7	1883	43.0	1880, 1882
Indiana.								
Lafayette	52.5	10	56.0	+ 3.5	56.4	1881	47.9	1889
Indian Territory.								
Fort Supply	58.6	12	58.6	0.0	62.2	1874	54.4	1885
Iowa.								
Cresco	45.8	20	49.2	+ 3.4	54.1	1879	41.2	1873
Kansas.								
Eureka Ranch	55.6	9	56.0	+ 0.4	62.9	1886	51.0	1883
Independence	58.4	20	60.8	+ 2.4	63.0	1881	52.2	1873
Salina	57.5	10	56.6	− 0.9	62.4	1886	52.0	1883
Louisiana.								
Grand Coteau	68.0	11	69.4	+ 1.4	75.5	1883	63.4	1891
Maine.								
Orono	45.6	21	45.3	− 0.3	49.7	1879	42.1	1888
Maryland.								
Cumberland	53.1	21	52.6	− 0.5	60.0	1881	48.0	1888
Michigan.								
Kalamazoo	50.0	16	51.9	+ 1.9	54.5	1879	45.7	1887
Missouri.								
Sedalia	57.0	10	58.8	+ 1.8	61.4	1886	51.3	1883
Montana.								
Fort Custer	47.4	13	52.0	+ 4.6	55.0	1891	42.2	1883
Nebraska.								
Fort Robinson	48.6	9	50.6	+ 2.0	53.6	1884	41.4	1883
Genoa (near)	49.2	16	54.1	+ 4.9	55.9	1886	45.0	1883
Nevada.								
Browns	54.5	20	53.0	− 1.5	61.7	1875	46.4	1882
Carson City	48.9	15	47.6	− 1.3	55.1	1875	44.0	1883

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of Oct.	(2) Length of record.	(3) Mean for Oct., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for October.			
					Highest.	Year.	Lowest.	Year.
New Hampshire.	°	Years	°	°	°		°	
Hanover	44.9	21	46.4	+ 1.5	52.4	1879	40.5	1888
New Mexico.								
Deming	66.9	10	60.5	− 6.4	72.4	1885	60.5	1892
Fort Wingate	52.5	21	50.9	− 1.6	57.8	1875	47.2	1871
New York.								
Cooperstown	46.4	21	45.9	− 0.5	53.3	1879	41.5	1888
Plattsburg Barracks	47.1	21	46.0	− 1.1	53.6	1879	42.1	1888
North Carolina.								
Lenoir	56.4	21	54.9	− 1.5	66.4	1878	48.0	1874
Oklahoma.								
Fort Reno	60.9	9	.....	.....	65.6	1888	57.1	1887
Fort Sill	62.1	20	61.1	− 1.0	70.0	1874	57.7	1885
Oregon.								
Bandon	52.0	8	52.8	+ 0.8	55.2	1889	47.0	1886
Eola	51.6	21	.....	.....	59.7	1876	45.4	1873
Pennsylvania.								
Dyberry	46.4	19	44.4	− 2.0	53.4	1879	41.3	1888
Grampian	47.6	21	47.4	− 0.2	56.4	1879	43.4	1888
Wellsboro	48.6	12	43.3	− 5.3	54.2	1881	41.2	1889
South Carolina.								
Statesburg	63.0	11	62.3	− 0.7	69.0	1881	58.7	1891
South Dakota.								
Fort Sully	48.7	21	54.8	+ 6.1	56.0	1879	42.1	1873
Texas.								
Austin	67.5	20	68.8	+ 1.3	73.6	1883	63.0	1873
Silver Falls	62.4	6	61.1	− 1.3	64.4	1890	59.7	1887
Utah.								
Terrace	52.3	16	56.0	+ 3.7	67.1	1887	45.8	1878
Vermont.								
Strafford	46.7	19	45.3	− 1.4	52.8	1879	40.6	1888
Virginia.								
Dale Enterprise	56.6	12	53.8	− 2.8	61.3	1886	48.2	1890
Washington.								
Fort Townsend	50.6	16	50.0	− 0.6	54.6	1875	48.6	1879
West Virginia.								
Parkersburg	58.0	11	.....	.....	71.5	1882	49.0	1888
Wisconsin.								
Embarrass	48.7	21	49.7	+ 1.0	57.5	1879	43.2	1889
Madison	47.8	16	52.1	+ 4.3	52.4	1886	44.1	1887
Wyoming.								
Fort Washakie	43.3	9	46.1	+ 2.8	47.2	1889	39.9	1881

YEARS OF HIGHEST MEAN TEMPERATURE FOR OCTOBER.

At Huron and Rapid City, S. Dak., Bismarck and Fort Buford, N. Dak., and Saint Vincent, Minn., the mean temperature for the current month was the highest ever reported for October during the respective periods of observation. The highest mean temperature for October was noted from the north Pacific coast over the northeast slope of the Rocky Mountains in 1889; on the middle Pacific coast in 1887; in the east Gulf states in 1884; in the middle Gulf states in 1883; along the Atlantic coast south of Pennsylvania in 1881; and from the lower Missouri and upper Mississippi valleys over the Ohio Valley, the Lake region, New York, and New England in 1879.

YEARS OF LOWEST MEAN TEMPERATURE FOR OCTOBER.

At Deming, N. Mex., the mean temperature for the current month was the lowest ever reported at that place for October. The lowest mean temperature for October was noted generally over New York and New England in 1888; in the upper Mississippi and Red River of the North valleys and in Texas in 1887; along the south Pacific coast in 1886; from eastern Kansas to the middle Gulf coast in 1885; over the middle plateau region in 1883; from the Pacific coast between the 35th and 45th parallels over the northeast slope of the Rocky Mountains in 1881; in the Atlantic coast states south of New York in 1876; and in the middle Mississippi, lower Ohio, and lower Missouri valleys in 1873.

MAXIMUM TEMPERATURE.

At Des Moines, Iowa, Huron and Rapid City, S. Dak., Valentine, Nebr., Cheyenne, Wyo., Denver, Colo., Walla Walla and Olympia, Wash., and Red Bluff, Cal., the maximum temperature for the current month was higher than previously reported for October.

The highest temperature reported by a regular station of the Weather Bureau was 100, at Yuma, Ariz., on the 4th. The maximum temperature was above 90 in the central valleys of California, in southern California and western Arizona, in South Dakota, in southern Texas, and in an area extending over western Arkansas and northwestern Louisiana, and was above 80, except from the western lake region over New York and New England, on the northeast slope of the Rocky Mountains, and along the immediate middle and north Pacific coasts. In eastern Maine, at stations in the extreme northern lake region, and at points on the immediate middle and north Pacific coasts the maximum temperature was below 70.

Reports of voluntary observers show maximum temperature 110 in the lower Colorado valley.

MINIMUM TEMPERATURE.

At Chattanooga, Tenn., Key West, Fla., and Los Angeles, Cal., the minimum temperature was lower than previously reported for October.

The lowest temperature reported by a regular station of the Weather Bureau was 14, at Havre, Mont., on the 29th. The minimum temperature was below 20 in the middle and upper Missouri and Red River of the North valleys, and over a great part of the middle and northern plateau regions, and was below 30 over northern New England, the upper lake region, and north of a line traced from the upper Ohio valley to Kansas, thence to southern New Mexico, thence to the Sierra Nevada Mountain range, and east of this line traced from eastern California to eastern Washington. Over the southern part of the Florida Peninsula and at points on the immediate middle and west Gulf coasts the minimum temperature was above 50.

LIMITS OF FREEZING WEATHER.

The southern limit of freezing weather is shown on Chart V by a line traced from east-central Maine over central New England, thence to extreme southwestern Ontario, thence to eastern Virginia, thence to central Mississippi, thence to northern Arkansas and southeastern Kansas, thence to southern New Mexico, and thence to the Sierra Nevada Mountains in eastern California. The western limit of freezing weather is shown by this line continued northward over eastern California and central Oregon, thence eastward over the valley of the Columbia River, and thence northwestward to northwestern Washington.

RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest monthly ranges of temperature were noted in the middle Missouri valley, where they exceeded 70. From that region the monthly ranges decreased eastward to less than 30 on the southeast New England coast, southeastward to less than 30 over extreme southern Florida and to less than 40 along the immediate middle and west Gulf coasts, southwestward to less than 40 on the south Pacific coast, and westward to less than 30 along the immediate middle and north Pacific coasts.

TEMPERATURE, JANUARY TO OCTOBER.

For the period January 1 to October 31, 1892, the temperature averaged about normal in the middle Atlantic states, the Ohio Valley and Tennessee, the lower lake region, the upper Mississippi and Missouri valleys, on the eastern slope of the Rocky Mountains, over the southern plateau region, and on the north Pacific coast. In New England, the upper lake region, and over the northern plateau region the temperature averaged less than 1 above, and in the extreme northwest and over the middle plateau region it was 1 to 2 above the average. In the west Gulf states and on the middle Pacific coast the temperature was less than 1 deficient, and in the south Atlantic and east Gulf states, at Key West, Fla., and on the south Pacific coast it was 1 to 2 below the average for the period named.

PERIODS OF HIGH TEMPERATURE.

The month opened with temperature 20 to 30 above the normal in the Dakotas, and maximum temperature 90 to 98 in South Dakota. This warm wave extended over Wisconsin and upper Michigan on the 2d and reached the middle Atlantic states on the 3d. On the 5th a temperature rise of 10 to 20 occurred in Manitoba, and the temperature was about 20 above the normal in that region. This warm wave extended over the Lake region and Ohio Valley on the 6th, and overspread the Atlantic coast states north of Florida during the 7th. A slight rise in temperature extended from the Northwest to the middle and south Atlantic states from the 8th to the 11th.

A slight rise in temperature extended from the Northwest to the Gulf States from the 10th to 12th, and a general and slight rise occurred east of the Mississippi River from the 13th to 15th. On the 14th the temperature rose 6 to 14 in the Rocky Mountain and plateau regions; on the 15th a marked rise in temperature was noted from the Mississippi River to the Rocky Mountains; on the 16th a slight rise occurred in the central valleys; on the 17th a rise of 10 was noted in the western lake region, and the highest temperature of the month was registered in central and western Tennessee; on the 20th the temperature rose 10 to 20 in the Lake region and Ohio Valley, and the highest temperature of the month was noted at points in the upper Ohio valley and on the lower lakes; during the 19th the warmer weather extended over the middle Atlantic and New England states.

A slight rise in temperature extended from the north-central districts to the middle Atlantic and New England coasts from the 20th to the 22d. On the 27th the temperature rose 10 to 18 in the Southwest, on the 28th there was a rise of 10 to 20 in the middle Mississippi and Ohio valleys, and on the 29th the warmer weather reached the south Atlantic and Florida coasts. On the 30th the temperature rose 10 to 14 in the middle Mississippi valley, and on the 31st a marked rise occurred east of the middle and lower Mississippi rivers.

PERIODS OF LOW TEMPERATURE.

From the 1st to the 6th a cool wave advanced from the northeast slope of the Rocky Mountains, carrying the line of freezing temperature to the upper Ohio valley on the 6th. A cool wave passed from the Saskatchewan Valley and the northern plateau region to the Atlantic coast from the 5th to the 9th, with temperature 8 below freezing in South Dakota and northeastern Minnesota on the 7th. A cool wave which appeared over the middle and northern plateau regions on the 11th reached the Mississippi Valley on the 14th and the Atlantic coast on the 17th. From the 13th to the 15th a cold wave extended over the plateau and Rocky Mountain regions from the Pacific coast. From the 16th to the 18th it advanced over the Mississippi Valley, with temperature 14 to 16 below freezing in the middle and northern Rocky Mountain regions, and reached the middle Atlantic and New England coasts on the 20th.

From the 21st to the 24th a cold wave passed from the northeast slope of the Rocky Mountains to the middle and south Atlantic coasts, carrying the line of freezing weather to northern Missouri, central Ohio, and West Virginia. From the 25th to the 28th a cool wave passed over the region between the lower Missouri valley and the east Gulf states, carrying the line of freezing weather to southern Kansas and the north part of the east Gulf states. A well marked cold wave advanced from the western Saskatchewan valley to the Atlantic coast from the 27th to 30th, carrying the line of freezing weather to southern New Mexico and the central part of the middle Gulf states.

FROST.

Frost injurious to vegetation was reported as follows: 2d, Harrisburg, Pa., plants slightly nipped; York, Pa., temperature fell to 33, heavy frost. 3d, heavy frost general in Virginia and Maryland. 5th, Wauseon, Ohio, corn killed. 6th, damage to tender vegetation throughout Ohio, and at Alpena, Mich. 8th, Larrabee, Iowa, corn and garden vegetables killed; Wakefield, Kans., tender vegetation killed. 9th, heavy frost general in Iowa, eastern Kansas, eastern Nebraska, and northern Illinois. 10th, Albany and Oswego, N. Y., tender plants killed. 11th, Susanville, Cal., garden vegetables killed. 13th, Salt Lake City, Utah, tender vegetation killed. 25th, general in Missouri, western Tennessee, Arkansas, and Louisiana, causing damage in exposed places. 26th, general in the Gulf States, and slight damage at Jacksonville, Fla. 27–28th, in Kentucky and Tennessee, and north parts of the Gulf States 31st, Augusta, Ga., temperature 33, heavy frost, tender vegetation killed.

The first light frost of the season was reported as follows: 2d, Lansing and Port Huron, Mich.; Saxon and Roxboro, N. C.; Cleveland, Ohio; Edinboro and Pittsburg, Pa.; Deseret, Utah; Ashland and Wytheville, Va.; Ella and Martinsburg, W. Va. 3d, Eastport, Me.; Leonardtown, Md.; Somerset, Mass.; Greensboro, Louisburg, Mount Pleasant, Oak Ridge, Raleigh, Rockingham, Soapstone Mount, and Weldon, N. C.; Harrisburg, Pa.; Narragansett Pier, R. I.; Bedford City, Birdsnest, Cape Henry, Dale Enterprise, Hot Springs, Lynchburg, Mossing Ford, and Spottsville, Va.; Grafton, W. Va. 4th, Payette, Idaho; Edmonton, Ky.

5th, Riley, Ill.; Kalamazoo, Mich.; Columbus and Toledo, Ohio; Phœnixville, Pa.; Parkersburg, W. Va.; Green Bay, La Crosse, and Milwaukee, Wis. 6th, New Haven, Conn.; Havana and Springfield, Ill.; Jeffersonville, Ind.; Greensburg and Pellville, Ky.; Portland, Me.; Cumberland, Md.; Rochester, N. Y.; Lenoir, N. C.; Sandusky, Ohio; Philadelphia, Pa.; Longshore, S. C.; Nashville, Tenn.; Salem, Va. 7th, Show Low, Ariz.; Canton, Mo.; Buffalo and Gate City, Okla. 8th, Purcell, Ind. T.; Fort Madison, Greenfield, and Indianola, Iowa; Columbus, Concordia, Kansas City, Morse, and Sterling, Kans.; Appleton City, Carthage, Edge Hill, Fayette, Glasgow, Lebanon, Neosho, Oak Ridge, and Steelville, Mo.; Kearney and Omaha, Nebr.; Yankton, S. Dak.

9th, Lynn, Ala.; Eagle Pass, Ariz.; Fort Smith, Ark.; Bushnell, Cairo, and Jordans Grove, Ill.; Davenport, Dubuque, Keokuk, and Keosauqua, Iowa; Pontotoc and Water Valley, Miss.; Liberty, Oakfield, Saint Charles, Saint Louis, and Shelbina, Mo.; near Oklahoma City, Okla.; Ashwood, Tenn.; Aurora, Forestburg, Graham, Highland, Mesquite, Nacogdoches, and New River City, Tex. 10th, Adairsville, Dahlonega, Diamond, and Marietta, Ga.; Louisville, Ky.; Meridian, Miss.; Hillsboro, N. Mex.; Albany, N. Y.; Burnett, Okla.; Effingham and Statesburg, S. C.; Chattanooga, Knoxville, and Memphis, Tenn.; Mountain Spring and near Palestine, Tex. 11th, San Ardo, Cal.; Santa Fe, N. Mex. 12th, Hydesville, Cal.

13th, Dudleyville, Ariz.; Bakersfield and San Bernardino, Cal.; Salina, Kans.; Colfax, Wash. 14th, Kennedy Gold Mine and Upper Lake, Cal.; Pueblo, Colo.; New Haven, Ill.; Hartley, Tex. 15th, Agnew, Georgetown, Independence, Napa, Sacramento, and Willows, Cal.; Roseburg, Oregon; Walla Walla, Wash. 16th, in the Cajon Valley and Pasadena, Cal.; East Portland, Oregon; Chelan, Fort Canby, and Madrone, Wash. 17th, Mount Huachuca, Natural Bridge, and Winslow, Ariz.; Eureka, Julian, Lagrange, Lodi, San Jacinto, and Wheatland, Cal.; Coldwater, Tex.; Fort Townsend, Wash. 18th, Tucson, Ariz.; Dodge City, Kans.; La Luz, N. Mex. 19th, near Yuma, Ariz.; Yuba, Cal.; Sedalia, Mo.

21st, Oswego, Ill. 22d, Nogales, Ariz. 23d, Jefferson City, Mo.; Pomeroy, Wash. 24th, Eufaula, Ind. T.; Kiowa, Kans.; Earlington, Ky.; Fox Creek and Lexington, Mo.; Childress, Tex. 25th, Warrior, Ala.; Camden, Helena, and Little Rock,

Ark.; Lehigh and South McAlester, Ind. T.; Lake Charles and Shreveport, La.; Agricultural College, Batesville, and Fayette, Miss.; New Haven, Mo.; Atlantic City, N. J.; Sac and Fox Agency, Okla.; Brownsville, Tenn.; Arlington, Burnet, Corsicana, Dallas, Grape Vine, Roby, and Weatherford, Tex.

26th, Auburn, Citronelle, Demopolis, Florence, Fort Deposit, Gadsden, Livingston, Mobile, Montgomery, Tallassee Falls, and Tuscaloosa, Ala.; Bristol and Jacksonville, Fla.; Alapaha, Athens, Augusta, Camak, Darien, Dublin, Fort Gaines, Forsyth, Lagrange, Louisville, Lumpkin, Milledgeville, Monticello, Morgan, Piscola, Savannah, and West Point, Ga.; Cheneyville, Coushatta, Delhi, Grand Coteau, Homer, Lafayette, Melville, and Monroe, La.; Brookhaven, Canton, Crystal Falls, Greenville, Hattiesburg, Holly Springs, Louisville, Pearlington, Vicksburg, and Yazoo City, Miss.; Southport and Wilmington, N. C.; Albany, Oregon; Aiken, Charleston, Cheraw, and Tillers Ferry, S. C.; Boerne, Brazoria, Devine, Hallettsville, Menardville, New Braunfels, and Palestine, Tex.; East Sound and Olga, Wash.

27th, Blakely, Eastman, Point Peter, and Thomasville, Ga.; Schriever, La.; Solomons, Md.; Currituck Inlet, N. C.; near Portland, Oregon; Simpsonville, S. C.; Norfolk, Va. 28th, Orlando and Pensacola, Fla.; Poulan, Ga.; Jackson, Miss. 29th, Bisbee and Wilgus, Ariz.; Fort Meade, Plant City, and Tampa, Fla. 31st, Hatteras, N. C.; Port Royal, S. C.

The first heavy frost of the season was reported as follows: 1st, Olney, Ill.; Greensboro, Pa. 2d, Cheboygan, Mich.; Carson City, Nev.; Buffalo, Ithaca, and Palermo, N. Y.; Bement and Garrettsville, Ohio; Corry, Dyberry, Grampian, Quakertown, Salem Corners, and Wellsboro, Pa. 3d, Barren Creek Springs, Md.; Bridgeton and Egg Harbor City, N. J.; Lowville, N. Y.; Goldsboro and Washington, N. C.; Ashland, Va. 4th, Valley Head, Ala.; Thornville, Mich.; Halls Peak, N. Mex. 5th, Watseka, Ill.; Williamsburg, Ky.; Leonardtown, Md.; Detroit, Grand Haven, Lansing, and Mottville, Mich.; Wauseon, Ohio; Big Stone Gap and Wytheville, Va.; Bluefield, W. Va.; Barron, near Milwaukee, and Viroqua, Wis.

6th, Washington, D. C.; Lagrange, Ill.; Burkesville and Harrodsburg, Ky.; Baltimore, Md.; Royalston, Mass.; Manistee and Port Huron, Mich.; Cincinnati, Columbus, North Lewisburg, Toledo, and Westerville, Ohio; Rugby, Tenn.; Bedford City, Clifton Forge, Dale Enterprise, Hot Springs, Nottoway, and Staunton, Va.; Buckhannon, Central Station, Glenville, Grafton, Parkersburg, and Tannery, W. Va. 7th, Fairfield, Iowa; Woodstock, Md.; Grand Forks, N. Dak.; Martinsburg, W. Va. 8th, Effingham, Ill.; Ames, Clarinda, Glenwood, Grinnell, Logan, and Sioux City, Iowa; Leavenworth, Manhattan, and Wakefield, Kans.; Minneapolis, Redwood Falls, and Saint Paul, Minn.; Langdon and Oregon, Mo.; Genoa, North Platte, Springview, and Valentine, Nebr.; Ellendale, Grand Rapids, and Reynolds, N. Dak.; Gate City, Okla.; Highmore, Kimball, Millbank, and Pierre, S. Dak.

9th, Carlinsville, Louisville, Walnut, and White Hall, Ill.; Belle Plaine, Blockton, Clinton, Corning, Cresco, Des Moines, Dubuque, Indianola, Iowa City, Iowa Falls, Murray, Oskaloosa, and Vinton, Iowa; Concordia, Cunningham, Eureka Ranch, Independence, Kansas City, Marion, Rome, Sterling, and Topeka, Kans.; Harrisonville, Kansas City, Mine La Motte, Neosho, Platte River, and Rea, Mo.; Fond du Lac, Wis. 10th, Show Low, Ariz.; Russellville, Ky.; Oswego, N. Y.; Edinboro and Phœnixville, Pa. 11th, Susanville, Cal.; Olio and Socorro, N. Mex. 12th, Idaho Falls, Idaho; East Canterbury, N. H.; Fort Stanton and Santa Fe, N. Mex.; Deseret, Utah; Hartland, Vt.

13th, Eastport, Me.; Helena and Miles City, Mont.; Salt Lake City, Utah. 14th, Montrose, Colo.; Buffalo, Okla. 15th, Forestville, Iowa Hill, and Kennedy Gold Mine, Cal. 16th, near Eagle Pass and near Florence, Ariz.; Independence and Keeler, Cal.; Colfax, Pine Hill, and Rosalia, Wash. 17th, Payson, Ariz.; Georgetown, Cal. 18th, San Ardo, Cal.; Rocky Ford, Colo.; Adrian, Mo.; Kearney, Nebr. 19th, Dudleyville, Ariz.; Davenport, Iowa; Lamonte, Mo.; Lincoln, Nebr.; Estalina Springs, N. Mex.; La Crosse, Wis. 20th, Payette, Idaho; McCune, Mo.; Salem, Va. 21st, Calabasas, Ariz. 22d, Beverly, N. J.; Easton, Pa.; Yankton, S. Dak.

23d, Chicago, Oswego, Ottawa, Riley, Springfield, and Sycamore, Ill.; Amana, Cedar Rapids, Fort Madison, Greenfield, Grundy Center, Hampton, Hopkinton, Hopeville, Keokuk, Keosauqua, Mechanicsville, Monticello, Mount Ayr, and Storm Lake, Iowa; Red Wing, Minn.; New Boston and Pickering, Mo.; Green Bay, Oshkosh, Waukesha, and Westfield, Wis. 24th, Indianapolis, Ind.; Purcell and Pauls Valley, Ind. T.; Darksville and Warrenton, Mo.; La Luz, N. Mex.; Saxon, N. C.; Kingfisher, Okla.; Pittsburg, Pa.; Kingston and Narragansett Pier, R. I.; Amarillo, Floydada, and Silver Falls, Tex.; Ella, W. Va.; Milwaukee, Wis.

25th, Fort Smith, Ark.; New Haven and New London, Conn.; Elberton, Hawkinsville, Hephzibah, and Homerville, Ga.; Cairo, Griggsville, and Havana, Ill.; Winterset, Iowa; Columbus, Dodge City, and Morse, Kans.; Catlettsburg, Ky.; New Bedford, Mass.; Water Valley, Miss.; Appleton City, Carrollton, Carthage, Clinton, Columbia, East Lynne, Eldon, Edge Hill, Fayette, Fox Creek, Gainesville, Gallatin, Grovedale, Hannibal, Lebanon, Lexington, Liberty, Oak Ridge, Oakfield, Olden, Poplar Bluff, Saint Louis, Shelbina, Stellada, Steelville, Warrensburg, and Wheatland, Mo.; Falls City, Nebr.; Gallinas Spring, N. Mex.; Murphy, N. C.; Guthrie, Keokuk Falls, and Oklahoma City, Okla.; Abilene, Brady, Houston, and Kent, Tex.

26th, Cordova, Decatur, Selma, Talladega, Tuscumbia, and Warrior, Ala.; Camden, Helena, and near Little Rock, Ark.; Adairsville, Americus, Atlanta, Diamond, Marshallville, Resaca, Rome, and Statesboro, Ga.; Jordans Grove, New Haven, and Palestine, Ill.; Salina, Kans.; Greensburg, Ky.; Franklin, Liberty Hill, Marksville, and Shreveport, La.; Holly Springs, Meridian, Palo Alto, University, Vaiden, and Washington, Miss.; Glasgow, Gordonsville, Jefferson City, and Sedalia, Mo.; Charlotte, Greensboro, Lenoir, Lumberton, Mount Pleasant, Oak Ridge, Raleigh, Soapstone Mount, and Weldon, N. C.; Allendale, Batesburg, Columbia, Effingham, Florence, Greenville, Hardeeville, Longshore, Statesburg, and Saint Stephens, S. C.; near Chattanooga and Memphis, Tenn.; Richmond and Spottsville, Va.

27th, Fort Deposit, Ala.; Dublin and West Point, Ga.; Jeffersonville, Lafayette, and Vevay, Ind.; Eufaula, Ind. T.; Edmonton, Matlock, and Shelbyville, Ky.; Boston, Mass.; Vermont, Mo.; Bryson City and Newbern, N. C.; Birdsnest, Va.; Port Angeles, Wash. 28th, Auburn, Demopolis, Livingston, and Montgomery, Ala.; Athens, Blakely, Fort Gaines, Louisville, Lumpkin, Marietta, Milledgeville, Monticello, and Morgan, Ga.; Lexington, Louisville, and Pellville, Ky.; New Brunswick, N. J.; Asheville and Louisburg, N. C.; Simpsonville, S. C.; Chattanooga, Knoxville, Nashville, and Rogersville, Tenn.; Avon, Lynchburg, and Mossing Ford, Va. 29th, Lochiel, Ariz.; Dahlonega, Ga.; Earlington, Ky.; Williamstown and Vineyard Haven, Mass. 30th, Kalamazoo, Mich.; Sandusky, Ohio; 31st, Gadsden, Ala.; Augusta, Ga.; Albany, N. Y.; Wilmington, N. C.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for October, 1892, as determined from reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In October the monthly precipitation is usually greatest along the north Pacific and east Florida coasts, where it exceeds 6.00. On the west Gulf, south Atlantic, and New England coasts, in an area extending from east-central Wisconsin over northern Lower Michigan, and along the Pacific coast north of the 40th parallel, the normal amount exceeds 4.00. East of a line traced from Minnesota to Texas the amount varies from 2.00 to 4.00. In the Rocky Mountain and plateau regions, save in the valley of the upper Columbia river, the average amount for October is less than 1.00. In the lower Colorado valley an entire absence of precipitation is not unusual in October.

In October, 1892, the monthly precipitation exceeded 8.00 on the east Florida coast between the 26th and 28th parallels, the greatest amount, 14.00, being noted at Jupiter. In extreme northwest Washington a depth of 7.62 was recorded at Neah Bay. The monthly amount exceeded 6.00 in areas in the Southwest and 4.00 over central and eastern Nova Scotia, along the immediate Pacific coast north of the 40th parallel, and in an area extending from south-central Texas to southwestern Missouri. East of the Mississippi River and south of the Lake region, over the northern, western, and southern Rocky Mountain and plateau regions, and in central and southern California, the monthly precipitation was less than 1.00, and in areas in those regions less than 0.50 fell.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was generally deficient, except in an area covering the middle and southern Rocky Mountain regions, central and northeastern Texas, western Arkansas, and southern Missouri. A slight excess was noted over Cape Breton Island, in the eastern and western Saskatchewan valleys, and middle California. The most marked deficiency in precipitation was noted along the Atlantic coast from Virginia to South Carolina, on the east Maine coast, and at Galveston, Tex., where it was 3.00 to 4.00, and the monthly amount was 2.00, or more, deficient east of the Mississippi River, and in areas on the north Pacific coast. The greatest excess in precipitation was reported at Denver, Colo., and Abilene, Tex., where it was about 3.00, and the excess was more than 2.00 from central Texas over western Arkansas, and in east-central Colorado.

Considered by districts the average percentage of the normal in districts where the precipitation was in excess was about as follows: Southeastern slope of the Rocky Mountains, 170; middle-eastern slope of the Rocky Mountains, 149; northeastern slope of the Rocky Mountains, 138. In districts where the precipitation was deficient the percentage of the normal was about as follows: Middle Atlantic states, 12; Ohio Valley and Tennessee, 16; south Atlantic states and extreme northwest, 25; lower lake region, 36; New England, 39; east Gulf states, 40; south Pacific coast, 41; upper Mississippi valley and northern plateau region, 44; upper lake region, 57; Key West, Fla., 68; north Pacific coast, 72; middle plateau region, 80; southern plateau region, 84; Missouri Valley, 87; middle Pacific coast, 93; west Gulf states, 94.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for October for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for October, 1892; (4) the departure of the current month from the average; (5) and the extremes for October during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of Oct.	(2) Length of record.	(3) Total for Oct., 1892.	(4) Departure from average.	(5) Extremes for October.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Arizona.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Fort Apache	1.30	16	0.55	− 0.75	4.68	1881	0.00	1878, 1891
Fort Mohave	0.26	20	0.00	− 0.26	2.00	1874	0.00	*
Whipple Barracks	0.66	21	1.41	+ 0.75	1.76	1889	0.00	*
Arkansas.								
Keesees Ferry	4.14	11	3.10	− 1.04	18.11	1883	0.10	1886
California.								
Fort Bidwell	1.16	20	1.28	+ 0.12	3.61	1889	T.	1887
Riverside	0.33	12	.....	.....	1.28	1889	0.00	1886, 1891
Colorado.								
Las Animas	0.55	11	0.08	− 0.47	1.19	1885	0.03	1890
Florida.								
Merritts Island	5.58	14	3.59	− 1.99	11.94	1886	1.33	1889
Georgia.								
Forsyth	2.83	18	0.50	− 2.33	7.86	1879	T.	1891
Idaho.								
Boise Barracks	0.99	19	0.77	− 0.22	4.06	1883	0.02	1891
Fort Sherman	1.77	9	1.06	− 0.71	2.82	1884	0.59	1882
Illinois.								
Centralia	3.56	12	.....	.....	8.55	1883	0.76	1886
Indiana.								
Lafayette	2.54	10	1.32	− 1.22	5.56	1883	0.73	1886
Indian Territory.								
Fort Supply	1.42	12	1.85	+ 0.43	4.99	1889	0.00	1873, 1875
Iowa.								
Cresco	2.35	21	1.51	− 0.84	8.06	1881	0.13	1889
Kansas.								
Independence	2.81	20	4.22	+ 1.41	7.16	1883	0.19	1874
Salina	2.35	10	2.22	− 0.13	8.80	1883	0.40	1885
Louisiana.								
Grand Coteau	2.52	9	0.47	− 2.05	4.98	1890	T.	1889
Maine.								
Orono	4.20	21	1.75	− 2.45	7.51	1888	1.09	1882
Maryland.								
Cumberland	2.43	21	0.24	− 2.19	6.65	1890	0.00	1879
Michigan.								
Kalamazoo	2.89	16	0.31	− 2.58	6.57	1881	0.31	1892
Missouri.								
Sedalia	2.88	14	2.04	− 0.84	7.07	1883	0.51	1878
Montana.								
Fort Custer	1.29	13	1.53	+ 0.24	4.60	1891	0.24	1885
Nebraska.								
Fort Robinson	1.50	9	4.74	+ 3.24	8.60	1887	T.	1888
Genoa (near)	1.62	16	1.36	− 0.26	3.48	1891	0.25	1879
Nevada.								
Browns	0.38	20	0.30	− 0.08	1.36	1884	0.00	*
Carson City	0.42	15	0.30	− 0.12	1.61	1882	T.	*
New Hampshire.								
Hanover	3.41	21	1.54	− 1.87	5.57	1873	0.53	1876
New Mexico.								
Deming	0.82	10	1.21	+ 0.39	2.13	1887	0.00	1882, 1891
Fort Wingate	0.92	21	1.39	+ 0.47	2.75	1872	0.00	*
New York.								
Cooperstown	3.35	21	1.79	− 1.56	5.91	1890	1.19	1887
Plattsburg Barracks	2.53	21	1.12	− 1.41	5.15	1873	0.46	1879
North Carolina.								
Lenoir	3.32	21	T.	− 3.32	9.50	1885	T.	1892
Oklahoma.								
Fort Reno	3.56	9	5.21	+ 1.65	6.82	1883	0.30	1891
Fort Sill	2.53	20	5.69	+ 3.16	8.02	1877	T.	1875
Oregon.								
Bandon	5.00	14	5.32	+ 0.32	11.80	1889	1.16	1880
Eola	3.12	21	.....	.....	8.01	1876	0.30	1874
Pennsylvania.								
Dyberry	3.48	21	0.82	− 2.66	7.39	1890	0.82	1892
Grampian	3.06	15	0.59	− 2.47	6.36	1890	0.59	1892
Wellsboro	3.57	13	0.33	− 3.24	7.50	1885	0.33	1892
South Carolina.								
Statesburg	2.93	11	0.19	− 2.74	8.15	1887	0.02	1884
South Dakota.								
Fort Sully	0.51	21	0.74	+ 0.23	1.51	1874	0.02	1872
Texas.								
Austin	2.43	20	3.40	+ 0.97	8.06	1871	0.12	1878
Silver Falls	2.23	6	3.63	+ 1.40	3.63	1892	1.01	1891
Utah.								
Terrace	0.18	18	0.00	− 0.18	0.75	1889	0.00	*
Vermont.								
Strafford	3.28	19	1.90	− 1.38	6.80	1873	1.20	1882
Virginia.								
Dale Enterprise	3.17	12	0.19	− 2.98	12.60	1885	0.19	1892

Departures from average precipitation—Continued.

State and station.	(1) Average for the month of Oct.	(2) Length of record.	(3) Total for Oct., 1892.	(4) Departure from average.	(5) Extremes for October.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Washington.	*Inches.*	*Years*	*Inches.*	*Inches.*	*Inches.*		*Inches*	
Fort Townsend	1.94	16	1.96	+ 0.02	3.58	1875	1.00	1885
West Virginia.								
Parkersburg	2.33	7	.....	.....	4.95	1888	0.61	1887
Wisconsin.								
Embarrass	3.71	21	3.50	— 0.21	8.75	1881	0.40	1872, 1889
Madison	2.78	21	0.36	— 2.42	9.12	1881	T.	1889
Wyoming.								
Fort Washakie	1.41	9	0.45	— 0.96	3.50	1891	0.44	1880, 1888

* Frequently.

PRECIPITATION, JANUARY TO OCTOBER.

For the period January to October, 1892, inclusive, the precipitation averaged about normal in the east Gulf states, the Ohio Valley and Tennessee, the upper lake region, the extreme northwest, the Missouri Valley, on the northeast and middle-eastern slopes of the Rocky Mountains, and over the middle plateau region. In the lower lake region and the upper Mississippi valley the precipitation was one-tenth to two-tenths greater than usual, and in the New England, middle and south Atlantic and west Gulf states, on the southeast slope of the Rocky Mountains, over the southern and northern plateau regions, and along the Pacific coast the precipitation was seven-tenths to nine-tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR OCTOBER.

At Abilene and Silver Falls, Tex., and Denver, Colo., the precipitation for the current month was the greatest reported for October during the respective periods of observation. The greatest precipitation for October was noted on the middle and south Pacific coasts in 1889; in an area extending from Maryland over eastern Tennessee and the interior of North Carolina in 1885; from the lower Missouri over the middle Mississippi and middle Ohio valleys in 1883; from the middle Missouri over the Red River of the North Valley in 1882; from the upper Mississippi valley over Lower Michigan in 1881; and from eastern Pennsylvania over eastern New York and southern New England in 1877.

YEARS OF LEAST PRECIPITATION FOR OCTOBER.

At Eastport, Me., Narragansett Pier and Block Island, R. I., New Haven, Conn., Atlantic City, N. J., Philadelphia, Dyberry, Grampian, and Wellsboro, Pa., Lynchburg and Dale Enterprise, Va., Charlotte and Lenoir, N. C., Knoxville, Chattanooga, and Nashville, Tenn., Cincinnati and Toledo, Ohio, Indianapolis, Ind., Detroit and Kalamazoo, Mich., and Dubuque and Davenport, Iowa, the precipitation for the current month was the least reported for October during the respective periods of observation. The least precipitation for October was noted from the northeast slope of the Rocky Mountains over the Red River of the North and extreme upper Mississippi valleys in 1889; over the greater part of New York in 1882; over the greater part of Kansas and Oklahoma and Indian territories in 1879; and from western Pennsylvania over Maryland and Virginia, and in the lower Mississippi valley in 1874.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in October, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Florida	2	Indian Territory	1

Precipitation to equal or exceed 2.50 *in* 24 *hours.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Texas	20	1-2, 2-3, 14, 14-15, 18, 19-20, 20, 20-21, 21, 21-22, 22, 22-23, 23.	Colorado	2	11-12, 12-13.
			Mississippi	2	22-23, 23.
			Alabama	1	22-23.
			California	1	9.
Louisiana	11	13, 13-14, 21-22, 22-23.	Indian Territory	1	13, 18.
			Nebraska	1	11-13.
Florida	7	1-2, 4, 10-11, 11-12, 23, 23-24.	Oklahoma	1	13.
			Wyoming	1	11-12.
Arkansas	3	14, 18-19, 31.			

Precipitation to equal or exceed 1.00 *in* 1 *hour.*

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Florida	3	4, 7, 8, 10, 12.	Minnesota	1	1.
Texas	3	3, 13, 31.	Mississippi	1	31.
Iowa	1	14.	Nebraska	1	12.
Louisiana	1	20.	Wisconsin	1	2.

Table of excessive precipitation, October, 1892.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Mobile	.....	2.55	22-23	.....	.....	.....
Arkansas.						
Fulton	.....	2.55	18-19	.....	.....	.....
Kirby	.....	2.74	14	.....	.....	.....
Madding	.....	3.94	31	.....	.....	.....
California.						
Upper Mattole	.....	3.65	9	.....	.....	.....
Colorado.						
Denver	.....	2.58	12-13	.....	.....	.....
Pikes Peak	.....	3.22	11-12	.....	.....	.....
Florida.						
Gainesville	.....	3.07	23-24	.....	.....	.....
Green Cove Springs	.....	3.20	23	.....	.....	.....
Hypoluxo	10.81	3.08	1-2	.....	.....	.....
Jupiter	14.00	3.82	4	3.80	2 00	4
Do	.....	.....	.....	1.05	1 00	7
Do	.....	5.95	10-11	2.55	1 30	10
Micco	.....	3.37	10-11	.....	.....	.....
Mullet Key	.....	.....	.....	1.50	1 30	8
Orlando	.....	2.88	11-12	.....	.....	.....
Titusville	.....	2.81	11-12	2.60	0 50	12
Indian Territory.						
Gwenndale	.....	3.50	13	.....	.....	.....
Do	.....	3.00	18	.....	.....	.....
South McAlester	10.25	.....	.....	.....	.....	.....
Iowa.						
Centerville	.....	.....	.....	1.20	1 00	14
Louisiana.						
Cameron	.....	3.65	13-14	.....	.....	.....
Emilie	.....	3.43	21-22	.....	.....	.....
Farmerville	.....	3.00	13	.....	.....	.....
Houma	.....	2.67	13-14	.....	.....	.....
Lawrence	.....	6.00	22	.....	.....	.....
Luling	.....	4.06	23	.....	.....	.....
Marksville	.....	.....	.....	1.50	0 45	20
Maurepas	.....	3.35	23	.....	.....	.....
New Iberia	.....	2.57	13	.....	.....	.....
Schriever	.....	3.21	23	.....	.....	.....
Thibodeaux	.....	2.60	22	.....	.....	.....
West End	.....	3.30	23	.....	.....	.....
Minnesota.						
Saint Paul	.....	.....	.....	1.03	1 00	1
Mississippi.						
Logtown	.....	3.50	23	.....	.....	.....
Ship Island	.....	3.55	22-23	.....	.....	.....
Missouri.						
Chillicothe a	.....	.....	.....	1.18	0 40	31
Nebraska.						
Fort Robinson	.....	4.21	11-13	.....	.....	.....
Franklin	.....	.....	.....	1.31	0 45	12
Oklahoma Territory.						
Guthrie	.....	3.06	13	.....	.....	.....

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Texas.		*Inches.*	*Inches.*	*Inches*	*h. m.*	
Brady	.....	4.59	19-20	.....	.....	.....
Brazoria	.....	3.79	1-2	.....	.....	.....
Brownwood	.....	3.20	21	.....	.....	.....
Camp Eagle Pass	.....	3.20	22-23	.....	.....	.....
Columbia	.....	4.01	1-2	.....	.....	.....
Corsicana *b*	.....	3.70	14	.....	.....	.....
Duval	.....	3.55	3	.....	.....	.....
Do	.....	3.15	18	.....	.....	.....
Forestburg	.....	4.25	23	.....	.....	.....
Fort Clark	.....	2.75	22	.....	.....	.....
Gainesville	.....	5.98	21-22	.....	.....	.....
Highland	.....	3.50	23	.....	.....	.....
Huntsville	.....	.....	.....	1.20	1 00	13
Longview	.....	2.70	14	.....	.....	.....
Menardville	.....	4.50	21	.....	.....	.....
Mountain Spring	.....	2.65	20-21	.....	.....	.....
Orange	.....	3.01	14-15	.....	.....	.....
Palestine	.....	3.82	14	.....	.....	.....
Panter	.....	.....	.....	1.00	0 30	31
Quanah	.....	2.50	20	.....	.....	.....
Red River City	.....	2.50	20-21	.....	.....	.....
Roby	.....	4.00	20-21	.....	.....	.....
Venus	.....	.....	.....	1.72	1 30	3
Victoria	.....	3.20	2	.....	.....	.....
Do	.....	4.30	14	.....	.....	.....
Wisconsin.						
Embarrass	.....	.....	.....	1.00	1 00	2
Wyoming.						
Laramie *b*	.....	3.90	11-12	.....	.....	.....

Received too late for publication in September, 1892.

Louisiana.						
Port Eads	12.50	4.78	5-6	.....	.....	.....
Missouri.						
McCune	.....	3.00	11	.....	.....	.....

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during October, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga	0.05	8	0.07	8	0.16	8
Bismarck, N. Dak	0.07	17	0.11	17	0.37	17
Boston, Mass	0.03	5	0.05	5	0.28	5
Buffalo, N. Y	0.03	19	0.05	19	0.15	19
Cincinnati, Ohio	0.10	7	0.12	7	0.20	7
Chicago, Ill	0.06	31	0.08	31	0.24	31
Cleveland, Ohio	0.07	18	0.11	18	0.26	18
Denver, Colo	0.03	12	0.05	12	0.28	12
Detroit, Mich	0.02	28	0.03	28	0.10	28
Dodge City, Kans	0.10	19	0.20	19	0.40	19
Duluth, Minn	0.01	14	0.02	14	0.08	14
Eastport, Me	0.07	30	0.12	30	0.31	30
Galveston, Tex	0.22	31	0.35	31	0.57	31
Indianapolis, Ind*	.....	.....	.....	.....	.....	.....
Jacksonville, Fla	0.07	23	0.12	23	0.48	23
Jupiter, Fla	0.35	7, 10	0.60	7	1.90	4
Kansas City, Mo	0.25	13	0.35	13	0.45	13
Key West, Fla	0.21	5	0.30	5	0.52	5
Marquette, Mich	0.10	14	0.17	14	0.51	14
Memphis, Tenn	0.05	31	0.10	31	0.14	31
Milwaukee, Wis*	.....	.....	.....	.....	.....	.....
New Orleans, La	0.02	22	0.03	22	0.18	22
New York, N. Y*	.....	.....	.....	.....	.....	.....
Norfolk, Va	.....	.....	.....	.....	.....	.....
Omaha, Nebr	0.05	31	0.10	31	0.30	31
Philadelphia, Pa *	.....	.....	.....	.....	.....	.....
Philadelphia Water Works	.....	.....	.....	.....	0.10	8
Pittsburg, Pa*	.....	.....	.....	.....	.....	.....
Portland, Oregon	0.02	13	0.04	13	0.10	13
Saint Louis, Mo	0.03	14	0.05	14	0.21	14
Saint Paul, Minn	0.20	1	0.30	1	1.03	1
Salt Lake City, Utah	0.02	11	0.04	11	0.15	11
San Diego, Cal	.....	.....	.....	.....	0.10	28
San Francisco, Cal	0.10	16	0.15	16	0.40	16
Savannah, Ga	0.03	11	0.05	11	0.20	11
Tampa, Fla	0.03	1	0.05	1	0.16	23
Washington, D. C	0.04	8	0.06	8	0.20	8
Wilmington, N. C	0.03	4	0.06	4	0.15	4-5

* Self-register out of order.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for October during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida	13	Kansas	1
Texas	10	Kentucky	1
North Carolina	7	Maine	1
Georgia	5	Mississippi	1
New Hampshire	5	New Jersey	1
Oregon	5	Ohio	1
Washington	5	Rhode Island	1
Louisiana	4	Tennessee	1
New York	4	Arizona	0
California	4	Colorado	0
Michigan	3	The Dakotas	0
Maryland	2	Delaware	0
Missouri	2	Idaho	0
South Carolina	2	Minnesota	0
Massachusetts	2	Montana	0
Virginia	2	Nebraska	0
Alabama	1	Nevada	0
Arkansas	1	Pennsylvania	0
Connecticut	1	Utah	0
District of Columbia	1	Vermont	0
Illinois	1	West Virginia	0
Indiana	1	Wisconsin	0
Indian Territory	1	Wyoming	0
Iowa	1	New Mexico	0

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
Florida	17	Michigan	5
North Carolina	15	Ohio	5
Texas	15	Arkansas	4
Louisiana	13	Oregon	4
Georgia	12	Tennessee	4
Kansas	11	The Dakotas	4
Illinois	10	Wisconsin	4
Pennsylvania	10	Kentucky	3
New York	10	Minnesota	3
South Carolina	9	New Hampshire	3
Alabama	8	Washington	3
Maryland	8	Indiana	3
Missouri	8	New Mexico	1
Rhode Island	8	California	1
Massachusetts	8	Utah	1
Virginia	8	Vermont	1
Maine	7	West Virginia	1
Connecticut	7	Delaware	1
Nebraska	7	Montana	1
New Jersey	7	Wyoming	1
Mississippi	6	Arizona	0
Iowa	6	Colorado	0
District of Columbia	5	Idaho	0
Indian Territory	5	Nevada	0

Excessive hourly precipitation.

State.	No. years noted.	State.	No. years noted.
Texas	10	Arizona	0
Iowa	5	California	0
Florida	4	Colorado	0
Kansas	4	Delaware	0
North Carolina	4	Idaho	0
Illinois	4	The Dakotas	0
Louisiana	3	Kentucky	0
Nebraska	3	Maine	0
Alabama	2	Massachusetts	0
District of Columbia	2	Michigan	0
Georgia	2	Minnesota	0
Indiana	2	Montana	0
Arkansas	1	Nevada	0
Connecticut	1	New Hampshire	0
Indian Territory	1	New Mexico	0
Maryland	1	Oregon	0
Mississippi	1	Rhode Island	0
Missouri	1	Tennessee	0
New Jersey	1	Utah	0
New York	1	Virginia	0
Ohio	1	Vermont	0
Pennsylvania	1	Washington	0
South Carolina	1	West Virginia	0
Wisconsin	1	Wyoming	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for October during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			*Inches.*	
Reidsville, N. C	29.09?	1885	Mayport, Fla	20.03	1880
Sims, Cal	28.57	1889			

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			*Inches.*	
Fernandina, Fla	13.14	20-21, 1882	Gainesville, Tex	5.98	21-22, 1892
Brackettville, Tex	13.08	1-2, 1881	Jupiter, Fla	5.95	10-11, 1892
Saint Augustine, Fla	10.31	9-10, 1880	Fort Meade, Fla	5.75	9, 1891
Key West, Fla	9.24	20-21, 1883	Amelia, Fla	5.67	1, 1891
Newport, Fla	8.20	8, 1870	Jacksonville, Fla	5.15	1, 1890
Galveston, Tex	7.77	2, 1871	New Bedford, Mass.	5.15	23-24, 1890
Fort Robinson, Nebr	7.07	23, 1887	Abbeville, La	5.08	21, 1890
Birdsnest, Va	6.85	7-8, 1891	Trial, S. C	5.02	22-23, 1890
Lawrence, La	6.00	22, 1892			

One hour and less.

Station and state.	Amount.	Time.	Date.
	Inches.	h. m.	
Jupiter, Fla	0.35	0 05	7, 1892
Do	0.35	0 05	10, 1892
Savannah, Ga	0.35	0 05	22, 1890
Key West, Fla	0.35	0 05	9, 1891
Cleveland, Ohio	0.30	0 05	13, 1890
Galveston, Tex	0.30	0 05	30, 1890
Jupiter, Fla	0.30	0 05	1, 1890
Key West, Fla	0.30	0 05	10, 1890
New Orleans, La	0.30	0 05	15, 1890
Washington, D. C	0.28	0 05	19, 1891
Brownsville, Tex	1.20	0 06	23, 1884
Jupiter, Fla	0.60	0 10	7, 1892
Fort Scott, Kans	1.80	0 20	2, 1881
Cresco, Iowa	1.11	0 20	10, 1878
Galveston, Tex	2.12	0 25	30, 1877
Abilene, Tex	1.50	0 25	24, 1885
Des Moines, Iowa	2.30	0 30	15, 1880
Titusville, Fla	2.60	0 50	12, 1892

SNOW (in inches and tenths).

Chart V shows the depth of snowfall reported for the month.

The heaviest snowfall of the month was reported in the middle Rocky Mountain region, where it was 20 to 40 at elevated stations in Colorado and southeastern Wyoming; at Pikes Peak, Colo., the total depth was 59. At Halls Peak, N. Mex., 9.6 fell. At Humphrey, N. Y., the monthly amount was 7.5, and at Lake View and Joseph, Oregon, the total depth for the month was 7.5 and 5, respectively. In the Atlantic coast states snow fell as far south as Maryland; in the Alleghany Mountain region as far south as southern West Virginia; at a majority of the Lake stations; in the plateau region to southern New Mexico and central Arizona; and over the greater part of the middle and northern plateau regions.

On the 1st trace of snow fell at Houlton, Me.; on the 5th a light fall of snow was noted in northern and western New England, northern and western New York, in the Catskill Mountains, New York, and trace was reported as far south as the District of Columbia and West Virginia. On the 11th and 12th heavy snow fell in the middle Rocky Mountain region, interrupting railroad traffic and causing loss of life and live stock. On the 25th, 29th, and 30th light snow fell in the mountain districts of New England.

DEPTH OF SNOW ON GROUND ON THE 15TH AND AT THE CLOSE OF THE MONTH.

On the 15th the depth of snow on the ground was 29 at Pikes Peak, Colo.; 0.8 at Toano, Nev.; 0.5 at Empire Ranch, Nev.; and trace at Mill City, Nev.

At the close of the month the snow on the ground measured 22 at Pikes Peak, Colo.; 0.5 at Farmington, Me.; and trace at Stofiel, Nev.

MONTHLY SNOWFALL.

Monthly snowfall of 1 inch or more was reported as follows, and in states and territories where the maximum depth was below that amount the station reporting the greatest is given:

Arizona.—Show Low, 1. *California.*—Fort Bidwell, 0.5. *Colorado.*—Pikes Peak, 59; Climax, 43; Red Cliff, 33.5; Dillon, 26; Husted, 25.5; Table Rock, 25; Castle Rock, 24.5; Smoky Hill Mine, 24; Villa Grove, 23.7; Gold Hill, 19.4; Cumbres, 19; Ward District, 18; San Luis, 16.9; Downing, 16.3; Manhattan and Steamboat Spring, 14; Georgetown, 13.4; Dumont and Saint Cloud, 13; Stamford, 12.5; Box Elder, 12; Pagoda (near), 10; Livermore, 8; Alma and Del Norte, 7.5; Como (near), 6.6; Thon, 6.5; East Dale, Moraine, and Sanborn, 6; Carson and Collbran, 5; Garnet, 4.5; La Jara, 4; Montrose, 3.7; Surface Creek, 3; Paonia and Vilas, 2; Parachute, 1.8; Delta and Springfield, 1.

District of Columbia.—Washington, D. C., trace. *Idaho.*—Idaho Falls, 2; Henrys Lake, 1.5; Garden Valley, 1. *Kansas.*—Altoona, trace. *Maine.*—Farmington and Mayfield, 2. *Michigan.*—Alpena, 1. *Minnesota.*—Saint Vincent, trace. *Montana.*—Havre, 2; Hogan, 1.2. *Nebraska.*—Ansley and Valentine, trace. *Nevada.*—Virginia City, 1.5; Stofiel and Toano, 1. *New Hampshire.*—Berlin Mills, 1.2. *New Mexico.*—Halls Peak, 9.6; Chama, 2.5; Estalina Springs, 2.2; Coolidge, 1. *New York.*—Humphrey, 7.5; Arcade, 3.4; Constableville and South Canisteo, 1.

North Dakota.—Medora, 3.3; White Earth, 3; Fort Stevenson, 2.7. *Ohio.*—Akron, Bangorville, Cleveland, Columbus, Ellsworth, Findlay, Hiram, New Comerstown, and Weymouth, trace. *Oregon.*—Lake View, 7.5; Joseph, 5; Baker City, 1. *Pennsylvania.*—Blue Knob, 2.5. *South Dakota.*—Ashcroft, 1. *Utah.*—Levan, Loa, and Provo City, 0.5. *Vermont.*—Chelsea and Strafford, 1. *Washington.*—Rosalia, 0.5. *West Virginia.*—Bluefield and Davis, trace. *Wisconsin*—Crandon, 0.7. *Wyoming.*—Laramie (*b*), 20; Saratoga, 16; Cheyenne, 10; Casper, 4; Camp Pilot Butte, 3; Fort Yellowstone, 1.5.

The first snow of the season was reported as follows: 1st, Houlton, Me. 3d, Burlington, Vt. 5th, Washington, D. C.; Taunton, Mass.; Port Huron, Mich.; Saint Vincent, Minn.; Buffalo, Ithaca, and Rochester, N. Y.; Cleveland, Ohio; Blue Knob, Clarion, Du Bois, Dyberry, Erie, Harrisburg, Le Roy, and Salem Corners, Pa.; Pleasant Hill, W. Va. 6th, Strafford, Vt. 11th, Montrose, San Luis, and Smoky Hill Mine, Colo.; Idaho Falls, Idaho; Losee and Salt Lake City, Utah; Casper, Cheyenne, Lander, Laramie, and Saratoga, Wyo. 12th, Denver and Pueblo, Colo.; Fort Stanton, Monero, Socorro, and Taos, N. Mex.; Yule, N. Dak.; Levan, Utah.

13th, Fort Ripley, Minn. 14th, Fort Sherman, Idaho; Coolidge, N. Mex.; Rosalia, Wash. 15th, Helena, Mont.; Winnemucca, Nev.; Baker City, Oregon. 16th, Shasta, Cal.; Fort Missoula, Havre, and Miles City, Mont.; Carson City, Nev.; Medora, Stevenson, and Willow City, N. Dak.; Ashcroft and Spearfish, S. Dak.; Evanston, Wyo. 17th, Garden Valley, Idaho; Bismarck, Dickinson, Fort Buford, and White Earth, N. Dak.; Provo, Utah. 18th, Henrys Lake, Idaho; Grafton, Milton, and Woodbridge, N. Dak. 21st, Estalina Springs and Fort Wingate, N. Mex. 22d, Sault Ste. Marie, Mich.; Halls Peak, N. Mex.; Crandon, Wis. 23d, Dodge City, Kans.; Marquette and Rockland, Mich.

24th, Cheboygan, Mich.; Northfield, Vt. 25th, Alpena and Berrien Springs, Mich.; Mount Pleasant, N. C.; Columbus, Ohio; Pittsburg, Pa.; Bluefield and Davis, W. Va. 26th, Dubuque, Iowa; Milwaukee, Wis. 28th, Show Low, Ariz.;

Lincoln, Wis. 29th, Farmington, Me.; Monroe, Mass.; Manistee and Mottville, Mich.; Berlin Mills, N. H.; Jamestown, N. Y.; Florence, Wis. 30th, Ansley and Kennedy, Nebr.; Loa, Utah; Lusk, Wyo. 31st, Duluth, Minn.; Valentine, Nebr.; Chama, N. Mex.; Castlewood, Highmore, Hotch City, Millbank, and Wolsey, S. Dak.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Indiana, Minnesota, Montana, and Wisconsin. 2d, Montana. 3d, Michigan, New York, and Ohio. 4th, Maryland, New York, North Carolina, and Pennsylvania. 5th, Maryland, Massachusetts, Ohio, and Pennsylvania. 8th, Alabama and California. 10th, Washington. 11th, California and Washington. 12th, Nebraska and Oregon. 13th, Missouri. 14th, California and Missouri. 15th, California. 16th, California, Connecticut, Massachusetts, Nebraska, and New York. 17th and 18th, Kansas. 21st, Colorado. 22d, New Mexico. 23d, Michigan and New York. 25th, New York, North Carolina, and Ohio. 27th, California. 28th, Arizona, California, Michigan, and Rhode Island. 29th, Arizona, Massachusetts, New Hampshire, Ohio, and Pennsylvania. 30th, Kansas and Texas. 31st, Arkansas, Colorado, Idaho, Iowa, Missouri, and Texas.

SLEET.

Sleet was reported as follows: 5th, New York, Ohio, and Pennsylvania. 6th, Vermont. 9th, Pennsylvania. 11th, California and Utah. 12th, New Mexico. 22d, Pennsylvania. 23d, Kansas. 24th, Arkansas and Michigan. 25th, Georgia, Michigan, North Carolina, and Pennsylvania. 26th, Pennsylvania. 29th, Michigan, Ohio, and Pennsylvania. 30th, Nebraska. 31st, Nebraska, Nevada, and Vermont.

WINDS.

The prevailing winds for October, 1892, are shown on Chart II by arrows flying with the wind. In the New England and middle Atlantic states and the lower lake region the winds were generally from southwest to northwest; in the south Atlantic states, from north to northeast; over the Florida Peninsula, from northeast to east; in the Gulf States, from northeast to southeast; in the Ohio Valley and Tennessee, from northwest to northeast; in the upper lake region, the upper Mississippi valley, on the northeast slope of the Rocky Mountains, and along the middle Pacific coast, from south to northwest; in the extreme northwest, from west to north; in the Missouri Valley and on the southeast slope of the Rocky Mountains, from southeast to south; on the middle-eastern slope of the Rocky Mountains, over the middle plateau region, and along the north Pacific coast, from southeast to southwest; over the southern plateau region, from east to south; along the south Pacific coast, from west to northwest; and over the northern plateau region, variable.

HIGH WINDS (in miles per hour).

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 8th, 51, e., at Tatoosh Island, Wash. 9th, 64, se., at Fort Canby, Wash. 10th, 72, s., at Fort Canby, Wash. 12th, 72, sw., at Amarillo, Tex.; 64, nw., at Pueblo, Colo. 16th, 88, sw., at Pikes Peak, Colo.; 50, s., at Amarillo, Tex.; 50, se., at Huron, S. Dak.; 50, se., at Dodge City, Kans. 17th, 52, se., at Huron, S. Dak.; 50, s., at Saint Vincent, Minn. 22d, 50, ne., at New Orleans, La. 24th, 57, e., at Tatoosh Island, Wash. 25th, 62, e., at Tatoosh Island, Wash. 26th, 50, e., at Tatoosh Island, Wash. 27th, 60, e., at Tatoosh Island, Wash. 28th, 58, nw., at Chicago, Ill.; 56, sw., at Detroit, Mich.; 54, sw., at Cleveland, Ohio; 52, w., at Grand Haven, Mich.; 50, nw., at Milwaukee, Wis. 29th, 60, nw., at Cleveland, Ohio; 55, sw., at Detroit, Mich.; 50, nw., at Port Huron, Mich.

LOCAL STORMS.

1st.—High wind unroofed dwellings and barns in eastern Maine. A heavy thunder and hail storm moved east over Saint Paul, Minn., in the afternoon; 2 buildings were struck by lightning. In Lavaca Bay, Tex., vessels were damaged by high wind.

2d.—At Marquette, Mich., a thunderstorm began in the early morning and ended 10.15 a. m.; a house was struck by lightning, and telephone wires were burned out.

3d.—In the evening a house in Cleveland, Ohio, was struck by lightning. A house and a barn near Mesquite, Tex., were struck by lightning,

4th.—A report from Eden Center, N. Y., states that 3 funnel-shaped clouds were observed over Lake Erie, and that one of the clouds caused a waterspout which lasted about 30 minutes. The Weather Bureau station at Kittyhawk, N. C., was struck by lightning. In the evening a wind, rain, and hail storm moved northeast over Washington, N. C.; a church was struck by lightning.

5th.—A heavy thunder and rain storm occurred at Ventura, Cal., in the evening; the electric light plant was struck by lightning.

7th.—At Vevay, Ind., a house was struck by lightning. A northwest gale, with rain, prevailed at Marquette, Mich.; several vessels were obliged to seek shelter in the harbor.

8th.—At Solomons, Md., a thunderstorm prevailed from 5.50 to 7 p. m.; trees and outbuildings were blown down. In the evening a thunderstorm, with rain and a heavy squall of wind, caused minor damage at Mobile, Ala. The Milwaukee steamer from Grand Haven, Mich., was compelled to return to port on account of heavy seas and high wind on Lake Michigan. High southwest winds and heavy rain prevailed along the middle and north Pacific coasts.

11-12th.—At Cheyenne, Wyo., high northwest wind and snow began 10.25 p. m., 11th, and continued during the 12th; seven inches of snow fell; traffic on railroads was blocked; and telegraphic communication was cut off. At Pueblo, Colo., rain changed to snow at 10.30 a. m., 12th, and snow changed to rain in the afternoon, with high west to northwest winds which reached a velocity of 64 miles per hour at intervals between noon and 1 p. m. Considerable damage was caused by wind. Trains on lines running north were delayed by heavy snow. At Denver, Colo., rain alternated with snow in the morning, and the wind reached a velocity of 48 miles per hour from the northwest at 8 a. m., 12th. The storm was very severe throughout eastern Colorado; several persons and a large number of cattle were frozen. High wind and heavy rain caused considerable damage in Indian Territory. At Titusville, Fla., a heavy rainstorm occurred about noon, 12th; 2.60 inches of rainfall were recorded in 50 minutes.

13th.—At Kansas City, Mo., a thunder, rain, and hail storm began in the afternoon, and rain continued until midnight; a building was struck by lightning. At Eureka, Cal., rain fell from a cloudless sky from 10.30 to 11.30 p. m.; the raindrops were large and scattered; amount of rainfall, .02 inch.

16th.—A severe thunderstorm occurred in Connecticut and southern Massachusetts. At North Stonington, Conn., a man was reported killed by lightning. Near Bridgeport, Conn., lightning struck a barn, severely shocking one person and killing 2 horses. San Francisco, Cal., was visited by a heavy rain and thunder storm in the morning.

22d.—High wind delayed traffic and caused some damage to shipping about New York City and on Long Island Sound.

23d.—A report from Abilene, Tex., stated that the rainfall of the preceding five days, 5.66 inches, exceeded by 1.00 inch the greatest depth of rainfall recorded at that station for a like period in October; streams overflowed and roads were almost impassable.

23d–25th.—Northeast gales prevailed along the Carolina coasts.

27th.—At New Orleans, La., a church steeple was struck by lightning. At Wilgus, Ariz., a house was blown down.

28th.—An exceptionally heavy thunderstorm occurred in the mountains northeast of Pasadena, Cal.; some hail fell, and heavy rain swelled streams, causing some damage.

28–29th.—Heavy gales prevailed on the Great Lakes. About 40 vessels were wrecked or damaged, and much damage was caused in the interior. At Milwaukee, Wis., fire driven by high northwest wind destroyed property to the estimated value of $5,000,000 on the 28th. At Marquette, Mich., the wind reached a velocity of 46 miles per hour from the north at 7.06 p. m. of the 28th, and continued to blow heavily until the morning of the 29th; the storm was reported the severest ever experienced at that station. A schooner was wrecked 9 miles south of Manistee, Mich. At Chicago, Ill., the wind shifted to northwest and reached a velocity of 58 miles per hour at 4 p. m., 28th, causing damage of a minor character.

At Red Wing, Minn., the wind reached a velocity of 48 miles per hour from the northeast at 9.23 a. m.; the storm was reported the severest of the season at that place. At Alpena, Mich., the gale began 5.20 p. m., 28th, and ended 1.45 p. m., 29th; vessels were detained, and a number of wrecks were reported. At Grand Haven, Mich., a southwest gale began the afternoon of the 28th; the wind shifted to west at 5 p. m., reached a velocity of 52 miles per hour at 11.07 p. m., and continued during the 29th; a schooner was wrecked near Muskegon, and the captain was drowned; and much damage of a minor character was caused in the city.

At Detroit, Mich., the gale began 8 a. m. of the 28th with a gust of wind reaching 45 to 60 miles per hour, and continued until 1.13 p. m. of the 29th. The storm was reported the most destructive in two years. The wind lowered the water in the river at Detroit 4 feet, and the water in Lake Saint Clair was lowered 2 feet. At Toledo the wind reached a velocity of 42 miles per hour at 2.17 a. m. of the 29th. At Sandusky, Ohio, a northwest gale during the 29th lowered the water in the bay 5 feet, grounding several vessels. At Cleveland, Ohio, the wind reached a velocity of 60 miles per hour from the northwest on the 29th; 3 steamers, 5 barges, and 2 schooners went ashore in the harbor. At Buffalo, N. Y., the wind reached a velocity of 42 miles per hour from the west at 12.54 a. m. of the 29th; vessels were delayed.

29th.—At Newburyport, Mass., a thunder, rain, and hail storm prevailed from 5 to 5.30 p. m., causing some damage.

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS.

The following table shows the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, Oct., 1892 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
Red River.						
Shreveport, La	39.9	7.3	31	— 1.9	13, 14	9.2
Arkansas River.						
Fort Smith, Ark	22.0	10.2	24	0.7	14	9.5
Little Rock, Ark	23.0	11.4	27	5.4	14	6.0
Missouri River.						
Fort Buford, N. Dak	.....	5.4	26, 27	4.9	1	0.5
Bismarck, N. Dak	.....	1.8	13	1.5	6, 27–29	0.3
Pierre, S. Dak	14.0	0.7	16, 17	— 0.2	31	0.9
Sioux City, Iowa	18.7	7.0	19	4.5	31	2.5
Omaha, Nebr	18.0	.....	.....	.....	.....	.....
Kansas City, Mo	21.0	7.1	24	5.0	11, 12, 17	2.1
Mississippi River.						
Saint Paul, Minn	14.0	3.1	2	2.2	29–31	0.9
La Crosse, Wis	11.8	2.4	1	1.8	29, 31	0.6
Dubuque, Iowa	16.0	3.4	1	2.7	16, 17	0.7
Davenport, Iowa	15.0	2.4	1	1.6	14	0.8
Keokuk, Iowa	14.0	2.3	2	1.3	15, 18–20, 22–27	1.0
Hannibal, Mo	17.0	3.3	1, 2	2.2	21–27, 30	1.1
Saint Louis, Mo	30.0	6.8	1, 2	5.0	18, 19, 24, 25	1.8
Cairo, Ill	40.0	6.7	1, 4	3.9	27–30	2.8

Heights of rivers—Continued.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
Mississippi River—Continued.						
Memphis, Tenn	33.0	4.9	1	1.7	29–31	3.2
Vicksburg, Miss	41.0	5.2	1, 2	— 1.0	30	6.2
New Orleans, La	13.0	5.0	2	3.0	31	2.0
Ohio River.						
Parkersburg, W. Va	38.0	2.3	11	1.0	30, 31	1.3
Cincinnati, Ohio	45.0	6.0	1	3.6	29, 31	2.4
Louisville, Ky	24.0	3.8	2	2.4	29–31	1.4
Cumberland River.						
Nashville, Tenn	40.0	1.9	1, 3	— 0.1	27–31	2.0
Tennessee River.						
Chattanooga, Tenn	33.0	2.2	1	1.1	26–31	1.1
Knoxville, Tenn	29.0	.....	.....	.....	.....	.....
Monongahela River.						
Pittsburg, Pa	29.0	6.0	1	5.0	27	1.0
Savannah River.						
Augusta, Ga	32.0	7.3	2	5.9	17	1.4
Willamette River.						
Portland, Oregon	15.0	3.0	8	0.6	31	2.4
Susquehanna River.						
Harrisburg, Pa	17.0	1.4	3	0.5	31	0.9
Alabama River.						
Montgomery, Ala	48.0	2.3	1	0.7	27–31	1.6

The stage of water in the Ohio River and tributaries and in streams of the east Gulf states was very low throughout the month.

ATMOSPHERIC ELECTRICITY.

THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 16, on the 4th; in 10 to 15 on the 1st, 3d, 7th, 8th, 12th, 13th, 14th, and 17th; in 5 to 9 on the 2d, 5th, 10th, 11th, 16th, 18th, 19th, 20th, 29th, 30th, and 31st; and in 1 to 4 on the 6th, 9th, 15th, 21st, and 23d to 28th. The 22d was the only date on which thunderstorms were not reported.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 21, in Texas; on 12 in Florida; on 5 to 10 in Colorado, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio, Oklahoma, Pennsylvania, South Dakota,

and Wisconsin; and on 1 to 4 in Alabama, Arkansas, Connecticut, Georgia, Indian Territory, Kentucky, Maine, Maryland, Massachusetts, Mississippi, Montana, New Hampshire, New Jersey, North Carolina, North Dakota, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, and West Virginia.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 1st, 7th, 8th, 27th, 28th, and 29th; in California on the 1st, 4th to 8th, 10th, 14th, 15th, 16th, 26th, 27th, and 28th; in Nevada on the 6th; in New Mexico on the 19th, 20th, 28th, 29th, and 30th; in Oregon on the 10th and 15th; in Utah on the 1st, 9th, 11th, 16th, and 31st; and in Washington on the 8th and 10th. No thunderstorms were reported in Delaware, the District of Columbia, Idaho, and Wyoming.

AURORAS.

The more widely observed auroral displays of the month were reported from New England to Washington and southward to the middle Rocky Mountain region on the 12th; from the Lake region to Washington and in the middle Rocky Mountain and plateau regions on the 13th; from New England to the Dakotas and to southern Illinois on the 17th; from the Lake region to the Dakotas and middle Rocky Mountain region on the 18th; and from the Lake region over the Missouri Valley and northern plateau region on the 21st.

Notable auroral displays of October, 1892.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
		°	°	
2	Erie, Pa	Cov'd 135	45	Flashes of light.
11	Northfield, Vt	165 to 225	20	White light.
12	Eastport, Me		25	Waves of light moving rapidly from west to east.
12	Marquette, Mich	120 to 240	75	An arch, which gave way to a diffused pale green light, with broad flashing beams.
12-13	Fort Buford, N. Dak	135 to 250	40	Irregular arch, with brilliant streamers.
12	Havre, Mont		60	An arch, with beams of light.
12	Helena, Mont	Cov'd 90	30	Yellow light, with beams.
12	Miles City, Mont		30	An arch, with "merry dancers."
13	Marquette, Mich	135 to 180	45	Faint arch.
15	Moorhead, Minn			Dark segment, with shafts of yellow light.
17	Eastport, Me		35	An arch, with beams and waves of brilliant light.
17	Northfield, Vt	160 to 225	36	White light, with streamers.
17	Malone, N. Y			Double arch, with streamers to zenith.
17	Miles City, Mont		60	"Merry dancers."
18	Alpena, Mich	90 to 180	30	Beams of white light, with a lateral movement from west to east.
17-18	Cheboygan, Mich		70	Brilliant streamers.
18	Grand Haven, Mich	135 to 225	15	White arch, with pale streamers.
18	Marquette, Mich	135 to 225	30	Obscured by clouds.
18	Sault Ste. Marie, Mich	135 to 270	40	Tea-green color, with yellow beams moving from west to east.
18	Juneau, Wis	145 to 240	14	With streamers.
18	Saint Paul, Minn	170 to 200	40	Pale light.
21-22	Helena, Mont	In the n.	30	Pale yellow light, with beams.

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for October, 1892, of the directors of the various state weather services:

ALABAMA.

Temperature.—Maximum, 94, at Daphne, 3d and 6th; minimum, 28, at Florence and Scottsboro, 28th; greatest monthly range, 61, at Brewton; least monthly range, 35, at Fayette.

Precipitation.—Greatest monthly, 3.03, at Mobile; least monthly, 0.00, at Gadsden.—*P. H. Mell, Observer, Weather Bureau, Auburn, director.*

ARIZONA.

Temperature.—Maximum, 110, at Fort Mohave, 5th; minimum, 22, at Whipple Barracks, 17th; greatest monthly range, 72, at San Carlos; least monthly range, 41, at Dos Cabezos.

Precipitation.—Greatest monthly, 1.83, at Walnut Ranch; least monthly, 0.00, at Fort Mohave, Gila Bend, Rancho del Pueblo, and Yuma.

Wind.—Prevailing direction, southwest.—*J. C. Hayden, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

Temperature.—The mean was 2.5 above the normal; maximum, 92, at Keesees Ferry, 3d, and at Hot Springs and Texarkana, 7th; minimum, 27, at Melbourne, 26th and 27th; greatest monthly range, 63, at Keesees Ferry and Hot Springs; least monthly range, 39, at Mount Nebo.

Precipitation.—The average was 1.34 above the normal; greatest monthly, 9.07, at Dallas; least monthly, 0.43, at Black Rock.

Wind.—Prevailing direction, south.—*M. F. Locke, Commissioner of Agriculture, Little Rock, director; F. H. Clarke, Local Forecast Official, Weather Bureau, assistant.*

CALIFORNIA.

Temperature.—Maximum, 103, at Needles, 3d; minimum, 26, at Susanville, 17th; greatest monthly range, 70, at Winchester; least monthly range, 31, at Berkeley.

Precipitation.—Greatest monthly, 5.84, at Crescent City; least monthly, 0.00, at Needles and Winchester.

Wind.—Prevailing directions, west and northwest.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

Temperature.—The mean was about normal, except in the central and northwestern tiers of counties where it was about 4.0 below; maximum, 97, at Crook, 4th; minimum, —4, at San Luis, 14th; greatest monthly range, 83, at Delta; least monthly range, 49, at Glen Eyrie.

Precipitation.—The average was greatly above the normal; greatest monthly, 4.30, at Climax; least monthly, 0.00, at a number of stations.—*J. J. Gilligan, Observer, Weather Bureau, Denver, director.*

FLORIDA.

Temperature.—Maximum, 91, at Bristol, 2d; minimum, 36, at Orange City, 29th; greatest monthly range, 54, at Orange City; least monthly range, 28, at Key West.

Precipitation.—Greatest monthly, 14.00, at Jupiter; least monthly, 1.28, at Pensacola.

Wind.—Prevailing direction, northeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

GEORGIA.

Temperature.—Maximum, 90, at Darien, 13th, at Eastman, 8th, at Thomasville, 2d, and at Lagrange, 17th, 18th, and 19th; greatest monthly range, 60, at Lagrange; least monthly range, 32, at Macon.

Precipitation.—Greatest monthly, 2.11, at Blakely; least monthly, 0.00, at Lafayette and Hawkinsville.

Wind.—Prevailing direction, east.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

IDAHO.

Temperature.—Maximum, 97, at Payette, 1st, and at Boise Barracks, 3d; minimum, 15, at Lake, 20th; greatest monthly range, 66, at Payette; least monthly range, 60, at Boise Barracks.

Precipitation.—Greatest monthly, 0.77, at Boise Barracks; least monthly, 0.15, at Lake.

Wind.—Prevailing direction, southwest.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

ILLINOIS.

Temperature.—The mean was 1.5 above the normal of the last 17 years; maximum, 94, at Muddy Valley, 1st; minimum, 13, at Philo, 30th.

Precipitation.—The average was 1.97 below the normal of the last 14 years; greatest monthly, 2.74, at Saint Johns; least monthly, trace, at Decatur.

Wind.—Prevailing direction, northwest.—*John Craig, Observer, Weather Bureau, Springfield, director.*

INDIANA.

Temperature.—The mean was 1.4 above the normal; maximum, 91, at Marengo, 3d; minimum, 15, at Marion, 30th; greatest monthly range, 65, at Marion; least monthly range, 28, at Irvington.

Precipitation.—The average was 1.61 below the normal; greatest monthly, 3.00, at Michigan City; least monthly, trace, at Point Isabel and Marion.

Wind.—Prevailing direction, southwest.—*Prof. H. A. Huston, Lafayette, director; F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

IOWA WEATHER AND CROP SERVICE.

Temperature.—The mean was 2.0 above the normal; maximum, 96, at Atlantic, 1st; minimum, 14, at Atlantic, 25th; greatest monthly range, 82, at Atlantic; least monthly range, 47, at Fort Madison.

Precipitation.—The average was 1.40 below the normal; greatest monthly, 2.58, at Maxon; least monthly, 0.00, at Bancroft.

Wind.—Prevailing direction, south.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

KANSAS.

Temperature.—The mean was 1.9 above the normal; maximum, 99, at Moreland, 6th; minimum, 11, at Shields, 31st; greatest monthly range, 77, at Shields; least monthly range, 50, at Salina.

Precipitation.—The average was 0.05 below the normal; greatest monthly, 6.94, at Sedan; least monthly, trace, at Collyer, Grainfield, and Grinnell.

Wind.—Prevailing direction, south.—*Prof. J. T. Lovewell, Topeka, director; T. B. Jennings, Observer, Weather Bureau, assistant.*

LOUISIANA.

Temperature.—Maximum, 96, at Clinton, 4th and 12th, and at Cameron, 8th; minimum, 29, at Davis, 25th; greatest monthly range, 62, at Rayne; least monthly range, 31, at Port Eads.

Precipitation.—The average was 0.57 below the normal; greatest monthly, 7.70, at Lawrence; least monthly, 0.04, at Amite.

Wind.—Prevailing direction, south.—*R. E. Kerkam, Local Forecast Official, Weather Bureau, New Orleans, director.*

MARYLAND.

Crops were damaged by drought in all sections of the state.

Temperature.—Maximum, 84, at Boettcherville and Solomons, 1st; minimum, 26, at Woodstock, 31st; greatest monthly range, 54, at Boettcherville and Seaford, Del.; least monthly range, 43, at New Market.

Precipitation.—Greatest monthly, 1.13, at Leonardtown; least monthly, 0.00, at Taneytown.

Wind.—Prevailing direction, northwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; Prof. Milton Whitney, Maryland Agricultural College, secretary and treasurer; C. P. Cronk, Observer, Weather Bureau, in charge.*

MICHIGAN.

Temperature.—The mean was 2.1 above the normal; maximum, 83, at Grand Rapids, 14th, and at Mottville, 3d; minimum, 8, at McMillan, 31st; greatest monthly range, 70, at McMillan; least monthly range, 30, at Arbela.

Precipitation.—The average was 1.78 below the normal; greatest monthly, 4.49, at Rockland; least monthly, 0.11, at North Marshall.

Wind.—Prevailing direction, northwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

MINNESOTA.

Temperature.—Maximum, 90, at Granite Falls and Blooming Prairie, 2d; minimum, 11, at Eagle Bend, 25th; greatest monthly range, 76, at Granite Falls; least monthly range, 53, at Pine River Dam.

Precipitation.—Greatest monthly, 2.49, at Grand Meadow; least monthly, 0.00, at Granite Falls.

Wind.—Prevailing direction, northwest.—*J. H. Harmon, Observer, Weather Bureau, Minneapolis, director.*

MISSISSIPPI.

Temperature.—The mean was 1.0 above the normal; maximum, 97, at Vaiden, 3d; minimum, 25, at Vaiden, 26th; greatest monthly range, 72, at Vaiden; least monthly range, 37, at Ship Island.

Precipitation.—The average was 2.19 below the normal; greatest monthly, 4.20, at Moss Point; least monthly, 0.00, at a number of stations.

Wind.—Prevailing direction, southeast.—*R. B. Fulton, Observer, Weather Bureau, University, director.*

NEBRASKA.

Temperature.—Maximum, 96, at Agee, 1st; minimum, 12, at Ansley, 29th; greatest monthly range, 76, at Ansley, Agee, and Lexington; least monthly range, 40, at Ericson.

Precipitation.—Greatest monthly, 5.80, at Hay Springs; least monthly, trace, at Haigler.

Wind.—Prevailing direction, south.—*Prof. Goodwin D. Swezey, Crete, director; G. A. Loveland, Observer, Weather Bureau, assistant.*

NEVADA.

Temperature.—The mean was 1.0 below the normal; maximum, 91, at Pioche, 4th; minimum, 2, at Sunnyside, 21st.

Precipitation.—The average was 0.18 below the normal; greatest monthly 1.11, at Virginia City; least monthly, 0.00, at Palisade and Beowawe.

Wind.—Prevailing direction, southwest.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

NEW ENGLAND.

Temperature.—The mean was 0.5 below the normal; maximum, 84, at Lynn (*b*), 14th; minimum, 20, at West Milan, 12th, and at Calais and Houlton, 13th; greatest monthly range, 58, at Lake Cochituate; least monthly range, 26, at Nantucket.

Precipitation.—The average was 2.37 below the normal; greatest monthly, 2.81, at Littleton; least monthly, trace, at North Woodstock.

Wind.—Prevailing direction, northwest.—*J. Warren Smith, Observer, Weather Bureau, Boston, director.*

NEW MEXICO.

Temperature.—Maximum, 92, at Los Lunas, 1st; minimum, 9, at Halls Peak, 18th; greatest monthly range, 78, at Chama; least monthly range, 39, at La Luz.

Precipitation.—Greatest monthly, 2.80, at Los Lunas; least monthly, 0.17, at Coolidge.

Wind.—Prevailing direction, east.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

NEW YORK.

The month was characterized by light precipitation, especially in the east and southeast parts of the state.

Temperature.—The mean was 0.3 above the normal; maximum, 82, at Fleming and Watkins, 1st; minimum, 22, at Malone, 12th; greatest monthly range, 54, at Poughkeepsie; least monthly range, 32, at Arkwright.

Precipitation.—The average was 2.00 below the normal; greatest monthly, 5.79, at Little Valley; least monthly, trace, at West Point.

Wind.—Prevailing direction, northwest.—*Prof. E. A. Fuertes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

NORTH CAROLINA.

The average rainfall was the least on record for October.

Temperature.—The mean was 1.5 below the normal; maximum, 91, at Rockingham, 1st; minimum, 20, at Bakersville, 31st; greatest monthly, range, 68, at Bakersville; least monthly range, 31, at Hatteras.

Precipitation.—The average was 3.05 below the normal; greatest monthly, 2.74, at Hatteras; least monthly, trace, at Lenoir.

Wind.—Prevailing direction, northeast.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

NORTH DAKOTA.

Temperature.—The mean was 5.0 above the normal; maximum, 95, at Medora, 4th; minimum, 7, at Woodbridge, 29th; greatest monthly range, 85, at Woodbridge; least monthly range, 58, at Jamestown and Saint John.

Precipitation.—The average was 0.97 below the normal; greatest monthly, 2.89, at Fort Yates; least monthly, 0.06, at Minto and University.

Wind.—Prevailing direction, northwest.—*W. H. Fallon, Observer, Weather Bureau, Bismarck, director.*

OHIO.

Temperature.—The mean was 1.0 above the normal; maximum, 89, at Marion, 3d; minimum, 20, at Van Wert, 30th; greatest monthly range, 68, at Marion; least monthly range, 41, at Harbor.

Precipitation.—The average was 1.73 below the normal; greatest monthly, 2.43, at Bissell; least monthly, 0.11, at Greenville.

Wind.—Prevailing direction, northwest.—*Prof. B. F. Thomas, Columbus, director; C. M. Strong, Observer, Weather Bureau, secretary and assistant.*

OKLAHOMA.

Temperature.—Maximum, 98, at Buffalo, 1st, and at Lehigh, 3d; minimum, 28, at Keokuk Falls, 25th; greatest monthly range, 68, at Buffalo; least monthly range, 31, at Kingfisher.

Precipitation.—Greatest monthly, 10.25, at South McAlester; least monthly, 1.85, at Fort Supply.

Wind.—Prevailing direction, south.—*J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.*

OREGON.

Temperature.—The mean was 0.9 above the normal; maximum, 93, at New Bridge, 2d; minimum, 14, at Fife, 26th; greatest monthly range, 78, at New Bridge; least monthly range, 37, at Astoria.

Precipitation.—The average was 0.62 below the normal; greatest monthly, 6.32, at Glenora; least monthly, 0.21, at Vale.

Wind.—Prevailing direction, southwest.—*Hon. H. E. Hayes, Master State Grange, Portland, director; B. S. Pague, Local Forecast Official, Weather Bureau, assistant.*

PENNSYLVANIA.

Temperature.—The mean was 1.4 below the normal; maximum, 83, at Coatesville, 1st; minimum, 16, at Wellsboro, 25th; greatest monthly range, 59, at Wellsboro; least monthly range, 37, at Erie.

Precipitation.—The average was 2.44 below the normal; greatest monthly, 2.93, at Saegerstown; least monthly, 0.00, at McConnellsburg.

Wind.—Prevailing direction, northwest.—*Under direction of the Franklin Institute, Philadelphia; H. L. Ball, Observer, Weather Bureau, assistant.*

SOUTH CAROLINA.

Temperature.—Maximum, 89, at Trial, 16th; minimum, 27, at Cheraw and Winnsboro, 31st.

Precipitation.—Greatest monthly, 1.78, at Hardeeville; least monthly, 0.13, at Statesburg.

Wind.—Prevailing direction, northeast.—*A. P. Butler, Observer, Weather Bureau, Columbia, director.*

SOUTH DAKOTA.

Temperature.—The mean was 4.4 above the normal; maximum, 98, at Pierre, 1st; minimum, 9, at Brookings, 25th, and at Castlewood, 23d; greatest monthly range, 82, at Brookings; least monthly range, 67, at Gary, Faulkton, Salem, and Wentworth.

Precipitation.—The average was 0.19 above the normal; greatest monthly, 3.24, at Rosebud; least monthly, 0.05, at Flandreau.

Wind.—Prevailing direction, northwest.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was 4.0 above the normal; maximum, 89, at Bolivar, 19th; minimum, 22, at Springdale, 30th; greatest monthly range, 66, at Springdale; least monthly range, 25, at Lookout Mountain.

Precipitation.—The average was 2.16 below the normal; greatest monthly, 1.13, at Covington; least monthly, 0.00, at Parksville, the only station reporting no rainfall for October during the last 10 years.

Wind.—Prevailing direction, north.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

TEXAS.

Temperature.—The mean was 1.2 above the normal; maximum, 100, at College Station, 5th; minimum, 29, at Fort Hancock, 26th; greatest monthly range, 67, at Fort Hancock; least monthly range, 36, at Orange and Galveston.

Precipitation.—The average was 0.69 above the normal; greatest monthly, 8.55, at Gainesville; least monthly, 0.22, at El Paso.

Wind.—Prevailing direction, southeast.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

UTAH.

Temperature.—Maximum, 92, at Fillmore, 5th and 6th; minimum, 7, at Parowan, 12th; greatest monthly range, 74, at Thistle; least monthly range, 40, at Grouse Creek.

Precipitation.—Greatest monthly, 2.32, at Parowan; least monthly, 0.00, at Stockton.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

VIRGINIA.

Temperature.—Maximum, 88, at Nottoway, 1st; minimum, 22, at Dale Enterprise, 27th; greatest monthly range, 61, at Nottoway; least monthly range, 37, at Mossing Ford.

Precipitation.—Greatest monthly, 0.73, at Nottoway; least monthly, 0.04, at Lynchburg.

Wind.—Prevailing direction, northwest.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

WEST VIRGINIA.

The month was very dry.

Temperature.—Maximum, 89, at Point Pleasant, 18th; minimum, 24, at Davis, 29th, and at Buckhannon, 6th; greatest monthly range, 62, at Point Pleasant; least monthly range, 44, at Martinsburg.

Precipitation.—Greatest monthly, 1.45, at Grafton; least monthly, 0.21, at Martinsburg.

Wind.—Prevailing direction, west.—*W. W. Dent, Observer, Weather Bureau, Parkersburg, director.*

WISCONSIN.

Temperature.—The mean was above the normal, except in a few south-central counties; maximum, 88, at Harvey, 14th; minimum, 14, at Black River Falls, 30th.

Precipitation.—Greatest monthly, 3.50, at Embarrass; least monthly, 0.05, at Cadiz.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

WYOMING.

Temperature.—Maximum, 92, at Wheatland, 1st; minimum, 10, at Evanston, 20th; greatest monthly range, 71, at Camp Pilot Butte; least monthly range, 52, at Fort Yellowstone.

Precipitation.—Greatest monthly, 2.35, at Lusk; least monthly, 0.00, at Lander.

Wind.—Prevailing direction, northwest.—*E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.*

METEOROLOGICAL TABLES.

Meteorological record of Army post surgeons, voluntary, and other co-operating observers, October, 1892.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
Alabama.	°	°	°	*Ins.*
Alco	87	33	66.4	.....
Bermuda *†5	84	33	64.8	0.11
Brewton†	92	31	72.2	1.00
Carrollton *†1	84	33	63.8	0.10
Citronelle†	84	42	68.4	1.34
Claiborne Landing†	.....	.....	.....	0.75
Cordova†	.....	.....	.....	0.11
Daphne†	94	41	70.0	1.78
Decatur *a*†	.....	.....	.....	0.29
Decatur *b*†	84	25	59.6	0.30
Eufaula *a*†	86	34	67.0	0.59
Evergreen†	85	32	60.2	0.75
Florence *a*†	.....	.....	.....	0.25
Florence *b*†	86	28	62.6	0.21
Fort Deposit†	86	32	67.4	0.60
Gadsden†	.....	.....	.....	0.00
Geneva†	87	36	67.1	1.10
Greensboro†	86	35	65.0	0.23
Healing Springs†	84	29	63.6	2.46
Highland Home†	85	35	66.9	0.86
Livingston *a*†1	84	32	63.5	0.18
Lynn†	.....	.....	.....	0.27
Maysville†	83	37	64.7	0.59
Mount Willing†	85	35	66.4	0.65
Opelika†	85	38	66.5	0.19
Pine Apple†	89	31	64.8	0.85
Pittsboro†	84	39	66.5	0.40
Pushmataha†	82	32	63.3	0.57
Scottsboro†	83	28	61.0	0.30
Selma *a*†	.....	.....	.....	0.21
Sturdevant†	.....	.....	.....	0.00
Talladega†	.....	.....	.....	0.13
Tallassee Falls†	.....	.....	.....	1.30
Tuscaloosa†	.....	.....	.....	0.41
Tuscumbia *a* *1	83	32	61.7	0.38
Tuscumbia *b*†	85	30	62.1	0.38
Union Springs *a*†	85	32	64.3	0.54
Uniontown	87	37	66.6	0.19
Valley Head †1	82	23	57.6	0.45
Warrior†	.....	.....	.....	0.26
Wilsonville†	.....	.....	.....	0.10
Alaska.				
Metlakahtla†	62	29	49.4	18.75
Arizona.				
Ariz. Can. Co. Dam.†	102	39	71.2	1.25
Benson *1	88	45	66.8	0.00
Bisbee †1	86*	39	60.4	1.48
Calabasas†	90	33	61.6	0.94
Casa Grande *1	101	45	72.2	0.15
Dos Cabezos *†1	83	42	60.9	1.06
Dragoon†	.....	.....	.....	0.37
Dragoon Summit *5	85	40	67.4	0.12
Dudleyville †1	97	34	66.1	0.65
Eagle Pass *2	85	32	58.8	0.64
Florence†	98	34	69.2	1.80
Fort Apache	87	25	53.6	0.55
Fort Bowie	90	40	61.9	1.80
Fort Grant	87	36	62.8	0.46
Fort Huachuca	91	35	62.4	0.16
Fort Mohave† f	110	40	71.3	0.00
Gila Bend *a* *†1	96	54	75.1	0.00
Gila Bend *b* *1	102	50	76.0	0.00
Lochiel *†1	80	35	60.4	0.45
Maricopa *1	105	66	69.5	0.80
Mount Huachuca†	84	37	60.8	0.96
Natural Bridge†	.....	.....	.....	1.50
Navajo Springs†	.....	.....	.....	0.77
Nogales *†5	90	32	64.5	0.55
Oracle †1	88	39	61.3	.....
Oro	.....	.....	.....	1.18
Pantano *1	98	50	71.3	T.
Payson *1	90	30	53.2	1.20
Phœnix *a* †	100	33	70.5	0.00
Reymert†	91	42	65.8	1.50
San Carlos	100	28	63.8	0.65
San Simon *1	95	42	66.5	0.59
Show Low	.....	.....	.....	0.70
Signal†	98	37	68.4	T.
Teviston	.....	.....	.....	0.07
Texas Hill *1	100	50	70.7	0.00
Tucson *a*†	95	40	68.1	0.32
Tucson *b* *1	93	50	71.3	0.00
Walnut Grove†	.....	.....	.....	1.00
Walnut Ranch *†1	85	31	59.2	1.83
Whipple Barracks	84	22	54.0	1.41
Wilgus†	.....	.....	.....	1.65
Willcox *1	94	48	69.2	0.00
Winslow *†5	88	25	56.0	0.55
Yuma *1	102	62	75.8	0.00
Arkansas.				
Arkadelphia†	.....	.....	.....	1.93
Arkansas City†	.....	.....	.....	0.91
Bee Branch†	86	31	62.5	3.54
Black Rock†	.....	.....	.....	0.43
Brinkley†	84	30	62.6	1.48
Camden *a*†	.....	.....	.....	2.31
Camden *b*†1	86	38	65.1	2.05
Conway *1	81	35	61.2	1.63
Dallas †1	86	35	63.4	9.07
Dardanelle†	.....	.....	.....	4.88
Eldorado †	86	41	68.6	4.41
Fayetteville †1	87	30	59.3	3.99
Forrest †	89	31	65.8	1.12
Fulton †	.....	.....	.....	4.54
Gaines Landing†	.....	.....	.....	1.32
Harrison †1	81	29	56.5	3.17
Helena *a*†	.....	.....	.....	0.37
Hope *†1	86	38	65.3	5.61
Hot Springs	92	29	62.9	5.80
Keesees Ferry *†1	92	29	60.9	3.10
Kirby†	88	35	63.9	6.24
Lonoke *1	86	36	66.0	1.81
Madding 2	.....	.....	61.8	4.57
Malvern†	83	29	60.0	2.05
Melbourne†	85	27	59.5	2.24
Mount Nebo†	83	.....	66.0	3.88
New Gascony *1	86	36	64.8	2.36
Newport *a*†	.....	.....	.....	1.62
Newport *b*†	88	32	63.3	2.15
Osceola†1	86	30	61.6	1.30
Ozark †	89	34	64.3	4.60
Pine Bluff†	86	35	66.5	2.88
Prescott†	84	42	66.1	2.56
Rogers†	.....	.....	.....	4.52
Russellville†	88	34	63.0	4.41
Searcy †1	82	33	60.8	1.86
Stuttgart†	85	31	63.5	3.25
Texarkana†	92	36	68.3	5.87
Warm Springs	.....	.....	.....	1.10
Washington *b* *1	86	38	65.3	5.61
Winslow *†1	77	32	61.7	5.55
California.				
Agnew 1	89	36	58.7	0.85
Alcalde *1	97	40	66.2	0.21
Almaden *1	91	41	61.0	0.90
Alvarado †1	88	35	57.3	1.71
Anaheim *1	95	45	65.0	0.19
Antioch *1	88	46	62.8	0.45
Aptos *1	80	37	58.3	1.36
Arcata	.....	.....	.....	2.69
Athlone *1	94	38	69.9	0.18
Auburn *1	90	44	64.5	1.76
Bakersfield *a* *1	92	40	64.8	0.01
Bakersfield *b*†	95	28	60.8	0.52
Ballast Point L. H.	.....	.....	.....	0.25
Beaumont *1	89	48	62.4	0.00
Belmont *1	80	39	63.4	0.00
Berendo *1	95	50	64.2	0.00
Berkeley	76	45	59.3	1.99
Bishop Creek *1	90	38	59.8	0.20
Boca *1	78	15	41.0	1.50
Borden *1	94	40	63.5	0.10
Boulder Creek *1	94	34	60.6	2.20
Brentwood *1	84	42	62.0	1.05
Brighton *1	95	40	65.1	1.03
Byron *1	92	40	61.7	1.25
Caliente *1	85	45	66.4	0.00
Calistoga *1	92	34	60.4	1.93
Capitola *1	84	40	60.2	0.00
Castroville *1	77	43	58.5	0.94
Centerville *1	91	.....	62.0	1.53
Chico *1	95	38	65.8	0.92
Cisco *1	69	14	43.9	0.95
Claremont†	90	39	64.0	0.09
Colfax *1	87	34	57.4	2.20
Colton *1	98	38	62.8	.....
Corning *1	89	38	64.3	0.14
Crescent City	.....	.....	.....	5.84
Crescent City L. H.	.....	.....	.....	4.36
Crofton *1	95	40	57.1	T.
Davisville *a* *1	96	44	64.0	0.51
Davisville *b*	94	41	65.5	0.63
Delano *1	96	42	64.3	0.32
Delta *1	95	35	59.6	3.40
Downey *1	94	44	66.2	0.31
Drytown	91	35	61.0	1.47
Duarte 1	99	42	63.0	0.33
Dunnigan *1	90	48	69.1	1.12
Dunsmuir *1	83	32	49.2	2.68
East Brother L. H.	.....	.....	.....	0.47
Edgwood *1	75	29	47.0	1.07
El Casco *1	93	40	62.7	0.00
Eldorado *1	93	40	61.0	2.04
Elmira *1	93	41	58.5	0.84
El Verano *1	90	40	60.4	1.32
Emigrant Gap *1	65	19	50.7	1.70
Esparto *1	96	30	62.9	0.79
Evergreen	.....	.....	.....	0.89
Exeter *1	95	40	64.8	0.42
Fall Brook *1	96	40	60.5	0.32
Farmington *1	90	34	64.0	0.69
Felton *1	94	30	61.8	1.69
Fernando *1	93	39	63.1	0.40
Florence *1	91	47	65.9	0.00
Florin *1	91	31	59.4	0.20
Folsom City *a* *1	90	40	63.6	1.30
Folsom City *b*	.....	.....	.....	1.31
Forestville†	90	35	59.8	2.24
Fort Bidwell	80	24	48.6	1.28
Fresno *1	100	49	69.2	0.32
Fruto *1	95	40	64.1	0.50
Galt *1	93	40	62.6	1.78
Georgetown†	86	32	58.7	3.11
Gilroy *1	90	37	61.1	1.19
Girard *1	90	38	56.5	0.33
Glen Ellen *1	91	24	59.7	1.67
Goshen *1	91	40	66.4	0.05
Grass Valley *a*	.....	.....	.....	2.72
Grass Valley *b*	80	30	53.2	2.61
Haywards *1	80	42	56.8	2.98
Hollister *1	96	35	58.5	0.87
Hornbrook *1	85	32	51.5	0.68
Humboldt L. H.	.....	.....	.....	2.40
Huron *1	90	45	67.7	0.10

Meteorological record of voluntary observers, &c.—Continued.

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
California—Cont'd.	°	°	°	*Ins.*
Hydesville †	76	34	52.4	3.05
Independence *a* †	88	28	57.8	0.35
Independence *b*	90	38	62.2	0.25
Indio *1	105	50	73.8	0.00
Ione *1	93	35	57.3	0.18
Iowa Hill *1	91	35	60.0	2.51
Julian †	80	32	56.4	0.56
Keeler *1	80	40	60.7	0.81
Keene *1	85	33	58.3	0.16
Kennedy Gold Mine *1	89	33	59.1	1.76
King City *1	90	36	65.2	0.42
Kingsburg *1	89	42	65.6	0.37
Knights Landing *1	97	34	61.3	0.59
Lagrange *6	98	37	65.3	0.70
Lathrop *1	94	38	61.4	1.14
Laurel *1	92	33	61.8	1.90
Lemoore *1	96	38	64.0	0.42
Lime Point L H	.....	.....	.....	2.63
Livermore *1	94	43	59.5	1.65
Livingston *1	90	48	60.9	0.43
Lodi	92	38	61.4	1.83
Long Beach *1	87	39	59.4	.....
Los Angeles *1	100	42	63.8	0.32
Los Banos *1	89	49	64.4	0.21
Los Gatos *a* *1	94	37	58.9	0.93
Los Gatos *b*	88	39	58.0	1.19
Mammoth Tank *1	99	58	70.8	0.10
Mare Island L. H	.....	.....	.....	1.55
Martinez *1	76	40	59.9	1.24
Marysville *a* *1	90	35	64.1	1.20
Menlo Park *1	78	42	59.6	1.14
Merced *1	93	45	63.8	0.27
Modesto *a* *1	88	37	67.2	0.68
Mohave *1	99	42	63.7	0.00
Monson *1	92	39	64.5	0.54
Montague *1	82	34	52.7	0.00
Monterey *1	78	36	57.2	0.00
Monterey (Hotel del Monte) *1	75	41	58.3	0.00
Napa City *a* *1	88	35	56.2	1.65
Napa City *b* 1	83	39	59.0	1.58
National City † 1	86	43	64.2	0.15
Needles *a* †	103	44	73.1	0.00
Needles *b* *† 2	99	.....	69.8	.....
Newark *1	81	44	61.5	1.07
Newcastle †	92	36	61.6	1.57
Newhall *1	95	38	63.1	0.30
Newman *1	79	47	64.2	0.28
Niles *1	84	40	58.7	1.69
Norwalk *1	98	45	62.6	0.21
Oakdale *4	94	36	57.6	0.78
Oakland *a*	76	41	58.2	2.51
Oakland *b* *1	75	45	62.4	1.79
Ogilby *1	110	60	81.3	0.00
Ontario *1	98	48	65.4	0.15
Orland *1	97	42	65.3	0.95
Oroville *1	96	48	67.8	1.22
Pajaro *1	82	39	60.8	1.13
Palermo †	94	34	61.2	1.19
Palm Springs *1	103	60	78.6	0.00
Pasadena 3	96*	38	64.2	0.60
Paso Robles *1	96	33	59.6	0.46
Petaluma *1	86	40	58.9	0.91
Piedras Blancas L H	.....	.....	.....	0.49
Pigeon Point	.....	.....	.....	0.45
Placerville *a* *1	90	38	59.2	2.23
Placerville *b*	83	30	54.2	2.44
Pleasanton *a* *1	92	36	60.3	1.63
Pleasanton *b*	91	32	56.6	1.71
Point Arena L. H	.....	.....	.....	2.25
Point Bonita L. H.	.....	.....	.....	2.82
Point Fermin	.....	.....	.....	0.51
Point Hueneme L H	.....	.....	.....	1.05
Point Lobos	73	48	57.0	1.13
Point Loma L. H	.....	.....	... ..	0.23
Point Montara L. H.	.....	.....	.....	1.32
Point Pinos L. H.	.....	.....	.....	0.70
Point Reyes L. H.	.....	.....	.....	1.17
Point Sur L. H.	.....	.....	.....	0.90
Pomona *1	95	41	60.5	0.15
Portersville *1	98	40	65.3	0.17
Puente *1	95	43	63.8	0.24
Ravenna *1	93	40	62.8	0.00
Red Bluff *1	93	47	65.6	1.35
Redding *a* *1	98	40	62.3	2.46
Redding *b* †	95	40	63.4	2.10
Redlands *b* *1	92	47	67.8	0.00
Riverside *b*	92	37	63.6	0.10
Roe Island L. H.	.....	.....	.....	0.95
Rocklin *1	92	40	64.8	1.30
Rumsey *1	93	45	66.5	1.03
Sacramento *a* 1	86	33	53.4	0.87
Sacramento *b* *1	86	40	60.6	0.69
Sacramento *c* *1	83	44	61.1	0.69
Salinas *a* *	77*	40k	.....	0.66
Salinas *b* *1	98	34	53.0	0.86
Salton *1	104	57	81.0	0.00
Sanger Junction *1	99	40	64.8	0.00
San Ardo *a* *1	98	37	61.8	0.15
San Ardo *b* †	98	32	60.1	0.38
San Bernardino †	95	35	61.4	0.16
San Gabriel *1	97	42	64.1	0.23
San Jacinto	95	30	61.2	0.69
San Jose *a* *1	85	42	60.0	1.00
San Luis L. H.	.....	.....	.....	0.60
San Mateo *1	75	43	56.5	1.45
San Miguel *1	95	41	62.8	0.40
San Pedro *1	95	48	69.9	0.63
Santa Ana *1	95	46	65.4	0.16
Santa Barbara *a*	91	43	62.0	0.26
Santa Barbara *b* *1	84	47	66.1	0.42
Santa Barbara L. H.	.....	.....	.....	0.18
Santa Clara *6	80	42	59.0	1.19
Santa Cruz *a* *1	83	41	60.8	0.92
Santa Cruz *b* †	82	42	58.0	0.93
Santa Cruz L. H.	.....	.....	.....	0.78
Santa Margarita *1	92	37	59.2	0.30
Santa Monica *1	80	45	61.6	0.00
Santa Rosa *1	85	40	60.5	1.44
Selma *1	88	40	66.3	0.45
Shasta †	85	30	52.2	3.31
Shingle Springs *1	85	45	59.0	2.30
Sims *1	90	32	54.0	1.64
Sisson *1	84	30	53.0	1.03
Soledad *1	88	36	58.5	0.75
Sonoma *4	83	36	55.2	1.37
S. E. Farrallon L. H.	.....	.....	.....	0.96
South Vallejo *1	78	43	60.2	1.36
Spadra *1	96	38	61.5	0.00
Stockton *a*	91	36	60.6	0.79
Stockton *b* *1	88	41	60.7	0.98
Summit *1	67	18	42.5	0.60
Suisun City *1	93	43	62.4	1.18
Susanville *† 1	78	26	47.9	0.83
Tehachapi *a* *1	82	34	54.3	0.60
Tehachapi *b* 1 *d*	87	20	53.7	0.12
Tehama *1	93	42	66.0	0.23
Templeton *1	97	32	58.6	0.47
Towles *1	85	30	55.3	2.74
Tracy *1	82	42	63.6	0.00
Traver *1	93	38	62.0	0.02
Trinidad L. H.	.....	.....	.....	3.66
Tropico *1	94	42	64.0	0.27
Truckee *1	74	22	43.2	0.37
Tulare *1	85	45	66.4	0.20
Turlock *a* *6	90	42	64.4	0.67
Turlock *b* *1	94	38	61.5	0.68
Upper Lake	94	32	59.4	1.17
Upper Mattole *1	90	40	57.8	4.75
Vacaville *a* *1	96	44	63.2	1.45
Vacaville *b* *1	93	45	67.1	1.48
Valley Springs *1	88	40	61.3	1.16
Ventura † 1	79	47	60.0	0.70
Vina *1	93	46	64.3	1.06
Volcano Springs *1	108	52	77.7	0.02
Walnut Creek	94	41	63.4	1.78
West Butte *	84	36	.....	0.51
Westley *1	92	48	68.8	1.74
Wheatland	98	38	63.2	1.04
Whittier *1	100	50	63.9	0.11
Williams *1	94	38	64.0	0.00
Willows *a* † 1	91	35	62.0	0.53
Willows *b* *1	95	40	64.2	0.55
Winchester †	102	32	62.6	0.00
Winters *1	95	41	67.1	0.61
Woodland *1	92	38	62.9	0.57
Yerba Buena L. H.	.....	.....	.....	2.04
Yreka †	84	28	50.2	0.05
Yuba City *5	89	48	64.6	1.17
Colorado.				
Abbott	.....	.....	.....	1.66
Alma †	70	10	35.3	0.91
Amherst †	.....	.....	.....	0.40
Arboles	.....	.....	.....	0.12
Avoca	.....	.....	.....	0.65
Box Elder	.....	.....	.....	0.65
Brush	.....	.....	.....	2.42
Carson *† 2	75	7	37.7	0.50
Castle Rock †	82	19	45.0	2.97
Cheyenne Wells *† 1	89	31	47.2	0.45
Climax *† 1	66	10	27.6	4.30
Collbran	.....	.....	.....	1.09
Colorado Springs †	80	24	48.0	1.54
Como (near) †	72	11	37.8	0.54
Cope †	93	21	53.6	1.77
Crook †	97	25	55.1	1.57
Cumbres †	68	3	35.4	1.90
Del Norte †	70	13	41.5	0.94
Delta †	93	10	47.3	0.10
Dillon †	.....	.....	.....	2.74
Downing †	90	16	47.4	1.63
Dumont	.....	.....	.....	1.42
East Dale	.....	.....	.....	0.78
Fort Collins (near)	.....	.....	.....	0.49
Fruita †	86	19	50.7	1.14
Garnett	.....	.....	.....	0.91
Gaynor	.....	.....	.....	1.54
Georgetown †	78	22	44.4	1.40
Glen Eyrie †	73	26	48.2	0.89
Gold Hill	.....	.....	.....	2.42
Grand Junction †	84	27	53.6	1.05
Greeley †	86	26	51.1	0.87
Greenhorn †	85	25	49.2	2.25
Grover †	86	19	47.8	2.46
Husted †	84	20	46.6	3.07
Julesburg †	90	24	51.0	2.07
La Jara †	81	14	46.0	1.19
Lamar †	91	20	55.4	0.40
La Porte	.....	.....	.....	1.13
Las Animas †	91	24	50.0	0.08
Lavender	.....	.....	.....	0.72
Le Roy *† 2 *d*	85	23	50.2	1.66
Leslie	.....	.....	.....	0.11
Livermore	78	25	46.0	0.97
Loveland	.....	.....	.....	1.84
Manhattan	.....	.....	.....	1.60
Middle Box Elder	.....	.....	.....	0.96
Minneapolis †	88	15	52.0	0.53
Moraine †	76	13	41.8	0.55
Orchard	90	25	51.9	0.00
Pagoda (near) †	87	10	41.6	2.10
Paonia †	.....	.....	.....	1.77
Parachute †	82	26	51.8	1.13
Red Cliff	.....	.....	.....	3.40
Rico	.....	.....	.....	2.00
Robb †	86	26	52.4	0.69
Rocky Ford †	89	25	52.8	0.95
Saint Cloud	.....	.....	.....	1.30
Sanborn	.....	.....	.....	1.54
San Luis †	78	— 4	41.0	1.69
Seibert	.....	.....	.....	0.95
Sheridan Lake †	.....	.....	.....	0.23
Smoky Hill Mine †	84	19	47.6	2.94
Springfield †	.....	.....	.....	0.65
Stamford	.....	.....	.....	1.25
Steamboat Springf.	83	7	42.8	1.60
Surface Creek †	77	20	47.8	1.02
Table Rock *d*	78	19	40.7	3.36
T. S. Ranch †	85	23	50.3	1.79
Thon †	93	20	47.7	0.76
Vilas	.....	.....	.....	0.40
Villa Grove †	.....	.....	.....	2.59
Wallet †	.....	.....	.....	0.52
Ward District	.....	.....	.....	0.56
Yuma	.....	.....	.....	1.00
Zuck	.....	.....	.....	0.31
Connecticut.				
Canton	72	27	49.4	1.10
Colchester	76	30	50.6	1.28
Falls Village	.....	.....	.....	1.22
Hartford *b*	.....	.....	.....	1.28
Lake Konomoc	.....	.....	.....	1.19
Lebanon	.....	.....	.....	1.78
Middletown	80	29	52.5	1.38
New Hartford *a* *† 1	68	24	41.9	1.29
New Hartford *b*	.....	.....	.....	1.28
North Franklin	.....	.....	.....	1.32
N. Grosvenor Dale 1	72	23	46.9	1.52
Norwalk *b*	75	27	49.8	0.68
South Manchester	.....	.....	.....	1.20
Storrs 1	74	30	48.5	1.09
Thompson *1	76	29	48.6	.....
Voluntown † 1	77*	24*	48.8 *f*	2.26
Wallingford †	.....	.....	.....	0.92
Waterbury	76	29	51.3	0.92
West Simsbury	.....	.....	.....	0.90
Delaware.				
Dover † 1	82	33	55.4	0.46
Kirkwood *2	80	.....	54.5	.....
Seaford †	84	30	55.0	0.84
District of Columbia.				
Dist'ing Reserv'r *5	81	35	54.8	0.31
Long Bridge †	.....	.....	.....	0.25
Rec'ing Reserv'r *5	79	33	54.4	0.26
West Washington. 1	85	30	56.0	0.34
Florida.				
Amelia †	83	44	69.4	2.22
Avon Park *† 1	89	48	71.1	4.97
Bristol †	91	51	75.0	0.00
Brooksville †	83	44	69.7	5.09
Clermont † 1	88	52	72.7	2.80
Eustis † 1	88	44	69.9	1.91
Federal Point †	85	43	68.9	3.32
Fort Meade †	85	38	71.2	4.11
Gainesville †	86	41	70.0	3.53
Grasmere	88	43	71.0	.....
Green Cove Sp'gs †	86	44	69.6	6.11
Homeland † 1	87	38	69.5	5.24
Hypoluxo *† 3	85	56	74.4	10.81
Manatee † 1	89	41	72.3	2.68
Merritts Island †	84	51	73.8	3.59
Mullet Key † 1	85	53	72.2	2.38
Myers † 1	87	49	73.2	4.64
Ocala *† 1	83	49	69.3	3.63
Orange City †	90	36	71.0	1.72
Orlando †	89	44	72.6	4.66
Plant City †	88 *d*	38 *d*	72.2 *d*	2.88
St. Francis B'k's	85	43	70.6	3.40
St. Petersburg † 1	87	46	72.6	2.65
Tallahassee † 1	85	41	67.0	1.00
Tarpon Springs †	90	42	71.6	2.35
Georgia.				
Adairsville †	87	28	61.0	0.24
Alapaha †	84	35	65.8	0.90
Albany †	86	36	67.4	T.
Americus †	85	33	65.6	0.25
Athens *a* 1	80	34	62.2	0.60
Athens *b* †	84	28	61.4	0.49
Bainbridge †	86	34	67.6	1.04
Blakely *† 5	85	35	67.0	2.11
Camak †	83	34	62.8	0.54
Canton †	.....	.....	.....	0.40
Columbus †	83 *f*	37 *f*	64.2 *f*	0.40
Cordele †	80	28	65.0	0.31
Dahlonega †	81	29	59.2	0.47
Darien †	90	38	69.2	1.88
Diamond †	80	21	54.2	0.43
Dublin †	85*	35*	65.4*	0.13
Eastman †	90	46	72.0	0.10
Elberton †	89	32	62.5	0.50
Forsyth *1	88	40	68.0	0.50
Fort Gaines †	86	34	66.1	0.86
Gainesville †	86	28	60.9	0.73
Gillsville *† 1	83	37	62.9	0.44
Griffin †	84	34	63.6	0.32
Hawkinsville †	85	29	62.5	0.00
Hephzibah *† 3	82	42	64.4	T.
Homerville †	84	38	66.8	1.37
Lafayette †	84	.....	.....	0.00
Lagrange † 1	90	30	65.4	0.43
Louisville †	89	31	65.6	0.20
Lumpkin †	85	38	60.5	0.17
Macon †	82	50	67.4	0.42
Marietta † 1	82	31	59.6	0.44
Marshallville †	84	31	63.3	0.21
Milledgeville †	82	33	63.4	0.29
Millen †	89	30	64.2	0.59
Monticello *† 1	80	37	64.0	0.46
Morgan †	83	.....	.....	1.29
Newnan †	82	31	62.2	0.36
Pisgola	86	39	68.2	0.85
Point Peter *1	82	30	60.8	0.50
Poulan † 1	88	32	64.4	0.87
Quitman *b* †	88 *d*	36 *d* *	66.4 *d*	0.39
Resaca †	.....	.....	.....	0.20
Rome †	82	30	60.6	0.31
Statesboro †	83	33	62.4 *	0.66
Thomasville †	90	36	68.0	1.54
Toccoa †	82	32	60.8	0.50
Union Point †	82	32	62.8	0.80
Washington †	86	30	63.4	0.45
Way Cross †	84	40	68.0	0.32
Waynesboro †	85	34	64.3	0.30
West Point †	82	40	67.3	0.15
Idaho.				
American Falls †	77	15	44.1	0.85
Boise Barracks	87	27	51.2	0.77
Fort Sherman	82	29	49.8	1.06
Garden Valley 1	80	24	49.4	2.54
Henrys Lake †	78	15	42.8	0.81
Kootenai † 1	72*	17	43.9	1.26
Payette †	87	21	51.0	0.71
Illinois.				
Alton †	.....	.....	.....	1.40
Aurora *a* †	79	16	49.6	1.28
Aurora *b* 1	84	20	52.4	1.23
Beardstown †	.....	.....	.....	0.52
Bloomington †	92	27	57.5	1.25
Bushnell †	90	23	56.0	1.19
Carlinville †	89	24	57.4	1.78
Chester †	.....	.....	.....	2.14
Collinsville †	84	29	57.5	1.72
Decatur *† 1	81	26	54.6	T.
Dixon † 1	82	18	50.7	1.07
East Peoria 1	88	22	54.9	1.20
Effingham †	87	22	56.4	0.76
Ellsworth †	84	19	54.6	0.80
Fairmount †	80	32	56.4	0.10
Fort Sheridan	78 P	28	.....	0.00
Galva † *	84	23	.....	.....
Golconda *1	89	29	59.7	2.05
Greenville 1	93	26	56.3	1.53
Griggsville †	87	23	56.2	1.52
Havana †	85	27	58.0	0.98
Hennepin †	86	18	52.6	0.70
Irishtown	.....	.....	.....	1.28
Jordans Grove †	89	28	58.4	2.44
Kankakee †	79	23	52.2	0.86
Lagrange †	81	23	53.0	0.81
Louisville *2	89	25	53.8	0.75
McLeansboro *1	89	26	58.5	2.11
Martinsville †	87 *d*	22*	56.2 *d*	0.83
Mascoutah *	86	27	.....	1.40
Mattoon	84	35	58.8*	0.85
Mount Carmel †	.....	.....	.....	1.28
Muddy Valley *2	94*.	32*	56.2*	2.64
New Haven †	.....	.....	.....	2.20
Olney *a* *1	87	26	58.5	0.82
Olney *b* *1	88	24	52.8	1.07
Oswego *1	81	20	50.6	0.90
Ottawa † 1	85	21	55.2	0.63
Palestine † 1	88	24	54.5	1.08
Pana *1	89	30	57.6	1.57
Peoria *a* †	.....	.....	.....	0.86
Peoria *b* 1	86	28	56.5	1.20
Philo † 1	89	13	54.9	0.50
Quincy	.....	.....	.....	0.30
Rantoul *1	83	20	53.0	0.62
Riley †	79	26	51.7	0.72
Rockford 1	79	25	51.5	0.78
Rushville	90	28	57.2	1.27
Saint John *3	86	32	60.0	2.74
Shawneetown †	.....	.....	.....	2.02
Sycamore *1	78	25	50.8	0.95
Walnut †	86	25	55.8	1.06
Warsaw †	.....	.....	.....	T.
Watseka 2	.....	.....	51.8	0.52
White Hall *4	83	26	52.6	1.44

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Indiana.	°	°	°	*Ins.*
Angola[1]	81	25	52.2	0.42
Ashboro *† [4]	87	35	58.2	0.78
Butlerville *[2]	81	22	54.8	0.90
Cambridge City†	81	29	52.3	0.20
Columbia City *[6]	81	28	52.0	0.80
Columbus *[1]	82	28	57.0	0.69
Connersville†	82	22	53.2	0.38
Degonia Springs *[6]	86	31	56.7	1.68
Evansville†	.....	.....	.....	1.91
Farmland *[1]	79	22	50.0	0.24
Franklin *[1]	82	24	58.4	0.56
Hammond†	80	32	54.6	2.64
Hawpatch *† [1]	75	29	51.9	0.20
Huntington†	.....	.....	.....	0.55
Irvington *† [2]	.....	35	51.6	.....
Jeffersonville[1]	83	29	56.6	1.05
Kokomo † [1]	82	22	53.4	0.34
Lafayette †	86	25	56.0	1.32
Logansport *a* †	.....	.....	.....	0.44
Logansport *b*	97	23	52.5	0.51
Madison†	.....	.....	.....	1.17
Marengo *[1]	91	34	58.6	1.30
Marion†	80	15	52.2	T.
Mauzy	82	18	50.6	0.45
Michigan City[1]	79	31	54.3	3.00
Mount Vernon *b*[1]	83	30	56.0	2.14
New Albany *† [1]	82	37	57.8	0.86
Point Isabel†	83	22	52.9	T.
Princeton *† [1]	86	31	56.3	0.85
Rockville	84	21	55.6	0.29
Rushville†	.....	.....	.....	0.49
Seymour†	85	27	55.6	1.43
Terre Haute†	.....	.....	.....	0.50
Vevay[1]	86	27	56.4	1.15
Vincennes†	.....	.....	.....	1.06
Worthington†	84	24	52.0	0.73
Indian Territory.				
Eufaula†	.....	.....	.....	6.42
Fort Supply	91	30	58.6	1.85
Gwenndale†	.....	.....	.....	9.50
Healdton†	.....	.....	.....	3.75
Lehigh†	98[d]	33[d]	64.5[d]	7.16
Pauls Valley†	92	31	62.1	2.68
Purcell†	95	32	65.4	3.99
South McAlester†	92	39	68.6	10.25
Tulsa†	.....	.....	.....	5.90
Iowa.				
Algona *[1]	86	21	52.2	1.41
Alta *a* † [1]	88	19	52.6	1.16
Amana†	84	22	52.8	1.15
Ames *b*[1]	90	18	53.6	1.79
Ames *c*	.....	.....	.....	1.82
Atlantic† [1]	96	14	50.2	1.27
Bancroft† [1]	89	19	50.1	0.00
Belle Plaine[1] *	80	22	49.2	1.74
Blockton†	85	21	53.1	2.10
Bonaparte† [1]	83	28	50.6	0.76
Cedar Falls†	86	21	52.2	2.06
Cedar Rapids†	85	27	55.6	1.03
Centerville†	.....	.....	52.1	2.08
Charles City†	84	18	51.4	1.27
Clarinda† [1]	87	29	57.0	1.98
Clinton[1]	88	20	51.3	0.63
College Springs	92	26	59.4	2.43
Corning *b* †	84	22	54.8	1.74
Cresco † [1]	82	22	49.2	1.51
Delaware *[3]	80	20	49.3	1.30
Denison † [1]	87	21	53.1	1.16
Eagle Grove *[3]	.....	23	49.6	2.10
Eldora	86	22	53.0	2.46
Fairfield † [1]	84	27	54.4	1.00
Fayette†	84	21	51.9	3.25
Fort Madison *† [1]	81	34	58.8	0.85
Glenwood †	90	24	58.4	0.46
Grand Meadow *[1]	76	28	51.1	2.56
Greenfield[1]	88	20	52.8	1.50
Grinnell † [2]	85	*25	50.6[e]	1.50
Grundy Center[1]	88	22	50.6	2.34
Hampton[1]	89	21	50.2	2.01
Hawkeye	.....	.....	.....	2.05
Hopeville†	85	23	55.1	2.61
Hopkinton *	78	30	.....	1.50
Independence † [1]	85	21	50.6	2.00
Indianola†	87	22	55.0	2.34
Iowa City†	85	21	54.4	1.02
Iowa Falls† [1]	89	21	50.6[d]	2.04
Keosauqua†	87	24	56.5	0.57
Larrabee†	88	15	52.7	1.21
Le Claire†	.....	.....	.....	0.77
Logan† [1]	92	22	57.6	1.81
Maquoketa *[1]	82	20	51.3	0.96
Mason City†	83	26	55.0	1.60
Maxon *[1]	87	27	54.0	2.58
Mechanicsville	80	25	53.0	0.72
Monticello *† [1]	81	23	50.4	0.93
Mount Ayr†	89	23	56.3	2.58
Mount Pleasant *a* [2]	78	.....	52.1	0.76
Mount Vernon *[1]	83	27	55.4	.....
Murray†	85	24	55.2	2.83
Osage *[3]	.....	22	45.4	1.49
Oskaloosa† [1]	90	22	53.0	2.12
Panama†	89	21	55.2	1.42
Richland *[3]	.....	23	49.3	1.85
Sidney	89	28	58.3	0.79
Storm Lake†	85	21	56.0[e]	0.65

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean.	Precip'n.
Iowa—Cont'd.	°	°	°	*Ins.*
Tipton†	87	24	54.3	0.54
Vinton *[1]	83	23	51.7	1.51
Washington	88	27	56.1	1.28
Webster City *[1]	92	22	52.6	2.06
Williams *[1]	90	19	47.5	2.22
Winterset †	90	23	55.4	2.41
Kansas.				
Abilene†	90	29	58.6	2.93
Allison *† [2]	87	26	48.6	1.54
Altoona *† [3]	85	30	53.8	5.78
Arkalon†	88	27	56.3	1.65
Atchison†	91	29	58.8	1.65
Belleville *†	93	25	.....	1.01
Bucklin	.....	.....	.....	2.55
Buffalo Park *	89	31	.....	.....
Burr Oak *	86	21	.....	1.62
Cawker City *[1]	80	28	55.6	0.20
Colby	91	22	52.6	0.36
Coldwater†	88	32	59.8	2.44
Collyer *[1]	90	30	54.4	T.
Columbus†	88	29	59.4	5.80
Cunningham† [1]	90	27	54.7	3.05
Downs	.....	.....	.....	0.71
Elco *[1]	89	33	58.6	2.64
Eldorado† [m]	.....	.....	.....	1.51
Elk Falls†	.....	.....	.....	4.46
Ellis	91	26	59.4	.....
Englewood * [1]	90	35	56.8	2.10
Eureka Ranch†	92	22	56.0	0.60
Fort Riley	87	27[j]	61.7[j]	1.64
Gibson	90	23	54.2	0.12
Gove City *† [1]	91	28	55.4	0.30
Grainfield * [1]	86	32	53.5	T.
Greensburg†	.....	.....	.....	2.68
Grenola *[1]	89	33	60.8	4.25
Grinnell *	90	34	.....	T.
Havensville *† [1]	87	20	55.7	1.45
Hays City †	91	30	60.8	0.52
Hesston	85	28	57.0	2.22
Horton†	88	29	58.4	0.90
Hutchinson†	93	29	60.4	3.43
Independence†	91	30	60.8	4.22
Kansas City † [1]	88	29	56.6	4.72
Kellogg	92	26	59.0	4.36
Kiowa†	97	33	59.0	2.26
Kirwin†	.....	.....	.....	1.80
Lakin†	93	22	56.6	0.02
Lawrence	85	32	56.9	3.48
Lebo†	88	28	57.0	2.96
McPherson†	88	29	57.7	3.46
Manhattan *a* †	.....	.....	.....	1.18
Manhattan *b*[1]	93	23	55.7	1.32
Manhattan *c* *[1]	92	24	53.7	1.24
Marion† [1]	92	28	57.0	2.24
Marmaton *	89	28	.....	2.80
Minneapolis *† [1]	86	28	56.4	0.75
Monument *[1]	86	27	55.5	0.33
Morland†	99	21	55.0	0.42
Morse†	87	28	58.2	3.32
Morton†	90	31	59.6	0.63
Oberlin†	.....	.....	.....	0.52
Oswego† [1]	84[n]	28[n]	56.6[e]	4.69
Page City *[1]	92	37	55.6	.....
Pleasant Dale *[1]	90	23	55.0	0.90
Quinter *	89	.....	.....	0.38
Rome *† [1]	88	34	59.2	3.54
Salina *† [1]	85	35	56.6	2.22
Sedan† [1]	91	35	60.2	6.94
Sharon Springs *[1]	90	32	55.6	.....
Shields†	88	11	55.0	0.17
Sterling†	89	28	60.6	1.44
Syracuse	.....	28	.....	0.64
Topeka	88	26	57.3	0.95
Tribune†	88	26	52.8	0.40
Ulysses†	93	34	60.2	0.26
Wakefield * [1]	92	30	59.0	2.55
Wa Keeney *[1]	85	34	53.6	.....
Wallace *a* †	.....	.....	.....	0.39
Wallace *b* *[1]	90	30	52.1	.....
Weskan *a* *	90	32	.....	0.25
Yates Center†	.....	28[d]	.....	4.14
Kentucky.				
Bowling Green † [1]	86	35	62.0	0.10
Burkesville	83	21	56.2	0.15
Burnside†	.....	.....	.....	0.45
Caddo† [1]	84	31	57.3	1.71
Canton *† [1]	89	27	58.8	2.21
Carrollton *† [1]	82	24	53.7	0.75
Catlettsburg *† [5]	79	38	56.9	0.45
Earlington	87	31	60.9	0.54
Edmonton†	78[n]	24[n]	53.3[n]	0.41
Falmouth†	.....	.....	.....	0.95
Frankfort†	.....	.....	.....	0.25
Franklin *† [1]	89	35	60.0	0.25
Grand Rivers	87	23	57.7	1.07
Greensburg *† [1]	85	26	57.5	0.10
Harrodsburg † [1]	86	19	54.9	0.37
Lagrange†	.....	.....	.....	0.85
Louisa †	.....	.....	.....	0.29
Matlock *[1]	84	30	60.1	T.
Middlesboro † [1]	83	22	54.3	0.29
Mount Sterling† [1]	81	22	52.2	0.49
Paducah *a* †	.....	.....	.....	0.62
Paducah *b* † [1]	84	31	60.9	0.74
Pellville†	93	24	60.0	0.64

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Kentucky—Cont'd.	°	°	°	*Ins.*
Princeton†	88	25	56.9	0.57
Richmond † [1]	79	35	61.6	T.
Russellville *† [1]	82	30	58.1	0.26
Shelbyville † [1]	86	20	55.4	0.73
South Fork † [2]	.....	.....	50.0	0.37
Springfield †	97	23	55.5	0.31
Williamsburg *a* †	.....	.....	.....	0.20
Williamsburg *b* †	83	20	54.8	0.18
Louisiana.				
Abbeville	94	37	71.4	1.32
Amite†	94	38	67.8	0.04
Baton Rouge†	85	36	68.6	0.68
Cameron†	96	39	70.4	5.39
Cheneyville†	92	34	69.5	0.62
Clinton[4]	96	48	76.6	0.37
Coushatta *a* †	.....	.....	.....	0.95
Coushatta *b* †	91	32	68.1	1.03
Covington†	88	35	68.2	2.38
Davis	87	29	64.0	2.01
Delhi†	.....	.....	.....	0.53
Donaldsonville†	86	50	70.4	3.87
Emilie†	86	40	69.7	3.53
Farmerville	86	35	60.2	5.11
Franklin†	88	39	69.9	2.04
Girard†	.....	.....	.....	1.85
Grand Coteau	88	40	69.4	0.47
Hammond	.....	.....	.....	3.50
Homer†	89	39	66.0	4.11
Houma†	89	38	68.6	2.67
Lafayette†	94	34	69.4	1.88
Lake Charles†	87	40	67.1	4.00
Lawrence†	86	45	70.3	7.70
Liberty Hill	91	33	68.0	1.88
Luling	89	38	67.6	5.17
Marksville†	88	37	67.6	3.50
Maurepas	86	37	67.3	3.54
Melville†	91	38	71.0	0.47
Minden†	97	34	68.7	0.74
Monroe†	86	36	66.5	1.52
Natchitoches†	88	34	65.2	1.72
New Iberia *	88	40	69.4	3.17
Opelousas†	88*	36*	69.6*	1.56
Paincourtville	88	38	69.3	4.55
Plain Dealing[1]	85	35	64.6	4.93
Rayne†	92	30	69.7	0.58
Schriever†	86	36	68.6	5.96
Shell Beach	87	43	70.0	1.65
Sugar Ex. Station†	88	42	71.1	1.48
Thibodeaux	.....	.....	.....	5.07
Wallace	86	39	69.7	4.17
West End	.....	.....	.....	4.10
Winnsboro	93	33	68.8	0.60
Maine.				
Bar Harbor	68	36	.....	1.17
Belfast *[6]	67	35	46.5	1.26
Calais	66	30	49.6	2.22
Cornish *[1]	71	30	45.7	2.14
East Machias†	68	24	44.2	1.35
Fairfield	74	25	44.9	1.37
Farmington†	78[f]	22[f]	46.2[f]	1.49
Houlton†	66	20	40.8	1.78
Kents Hill	70	29	45.2	1.25
Lewiston[1]	69	29	45.7	1.81
Mayfield	68	24	42.1	1.60
Orono† [1]	70	26	45.3	1.75
Petit Menan *[1]	59	32	42.8	.....
West Jonesport *[1]	68	30	49.6	.....
Maryland.				
Barren Cr'k Sp'gs † [1]	81	28	53.6	0.09
Boettcherville *[1]	84	30	52.9	0.20
Cumberland *a* †	78	30	52.6	0.24
Cumberland *b*	78	34	53.4	0.27
Darlington†	80	31	54.3	0.38
Easton†	79	32	56.4	0.79
Fallston *[1]	80	33	53.0	0.45
Frederick[1]	82	32	52.9	0.19
Great Falls *[5]	81	29	54.1	0.10
Jewell[2]	.....	.....	53.2	0.50
Leonardtown†	81	34	59.2	1.13
McDonogh	78	33	53.6	0.34
Mt. St. Marys Col†	82	31	54.4	0.22
New Market *[1]	75	32	48.7	0.21
Solomons † [1]	84	40	57.0	0.67
Taneytown†	.....	.....	.....	0.00
Woodstock[1]	79	26	51.6	0.24
Massachusetts.				
Adams *a*	76	31	49.7	.....
Adams *b*	.....	.....	.....	0.95
Amherst[1]	73	26	48.4	0.46
Amherst Ex. St'n *a* [1]	75	24	50.0	0.64
Andover[1]	77	30	48.4	1.39
Ashland	.....	.....	.....	1.06
Beverly Farms[1]	74	31	48.3	2.46
Blue Hill (sum't)	75	32	49.5	2.20
Blue Hill (valley)	78	25	48.7	2.23
Boston	.....	.....	.....	2.33
Cambridge *a*	77	29	51.4	1.76
Cambridge *b*	74	32	50.6	2.15
Chestnut Hill	75	30	50.8	2.39
Chicopee	.....	.....	.....	0.69
Clinton	.....	.....	.....	0.39
Concord *a* †	76	24	48.4	1.71
Concord *b*	76	25	48.8	1.71
Dudley[1]	75	29	48.4	1.49
Egg Rock, Nahant	72	36	50.4	.....

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Massachusetts—Con.	°	°	°	*Ins.*
Fall River *a* *[1]	74	34	52.0	1.80
Fiskdale	.....	.....	.....	1.03
Fitchburg *a* *[1]	70	33	47.6	0.62
Fitchburg *b*	75	28	48.7	0.66
Florida *b*	68	26	45.6	1.09
Framingham	77	23	49.6	1.28
Gilbertville	72	24	47.6	0.73
Groton *a*	75	26	48.8	1.10
Groton *b*	76	30	50.4	.....
Heath *[6]	76	28	48.8	.....
Hyannis *[1]	76	36	54.2	2.07
Lake Cochituate	80	22	49.2	1.42
Lawrence	76	30	50.2	1.40
Leicester	71	29	48.2	0.55
Leominster *[6]	75	33	49.5	0.89
Long Plain *[6]	74	28	50.5	2.24
Lowell *a*	76	28	49.7	1.38
Lowell *b*	77	26	49.5	.....
Lowell *c*	75	27	49.4	.....
Ludlow *a*	75	20	46.3	0.80
Lynn *a*	71	32	49.2	2.52
Lynn *b*	84	28	52.8	.....
Mansfield *[1]	75	27	49.1	2.78
Medford	.....	.....	.....	1.94
Middleboro	78	22	49.2	1.85
Milton *[1]	74	32	48.9	2.45
Monroe	70	27	45.1	1.57
Monson	75	31	50.0	1.08
Mount Nonotuck	.....	.....	.....	0.56
Mystic Lake	.....	.....	.....	2.11
Mystic Station	.....	.....	.....	1.94
New Bedford *a* *[1]	74	32	49.7	1.81
New Bedford *b*	77	28	51.2	1.85
Newburyport *a*	77	29	.....	1.32
Newburyport *b*	.....	.....	.....	1.15
North Billerica	74	30	51.7	2.35
Plymouth *[1]	76	34	54.4	2.29
Provincetown	72	33	51.8	2.36
Randolph	.....	.....	.....	2.65
Roberts Dam	.....	.....	.....	1.58
Roxbury	75	35	51.5	2.61
Royalston *[1]	72	38	49.5	0.62
Salem *b*	.....	.....	.....	2.78
Savoy	65	20	42.2	.....
Somerset *[1]	80	32	52.2	1.76
South Hingham	.....	.....	.....	2.77
Springfield Armr'y	74	30	50.6	0.97
Taunton *a* [1]	82	28	50.3	1.74
Taunton *b*	82	27	50.3	1.49
Taunton *c*	79	23	49.8	1.56
Taunton *d* [1]	80	24	50.3	1.56
Wakefield	75	28	49.7	2.28
Waltham	.....	.....	.....	1.58
Webster	.....	.....	.....	1.29
Westboro†	76	27	50.4	0.90
Williamstown[1]	68	31	48.3	1.57
Winchester	.....	.....	.....	1.50
Worcester *a*	74	32	48.4	0.36
Worcester *b*	78	32	51.2	0.58
Michigan.				
Adrian	81	21	49.7	2.46
Allegan	81	24	50.9	1.04
Alma	80	24	48.8	1.38
Ann Arbor	76	28	49.6	0.50
Arbela[2]	.....	.....	44.6	2.01
Ball Mountain	76	28	48.3	0.74
Bear Lake	77	23	47.6	2.26
Bellaire	80	21	44.2	2.76
Benton Harbor	80	32	53.5	2.60
Berlin *[1]	82	27	49.2	1.19
Berrien Springs *a* *[1]	80	35	52.3	1.76
Birch Run	78	23	49.5	1.57
Birmingham[1]	76	28	49.5	0.02
Boon[1]	74	26	42.9	2.55
Bronson	84	19	49.0	0.40
Brown City	76	30	49.1	1.12
Calumet	71	30	45.1	4.36
Charlevoix [b]	76	34	50.0	1.75
Clinton	81	23	50.0	0.47
Crystal Falls	76	22	44.7	.....
Fairview	79	22	49.7	0.43
Fitchburg	77	22	48.8	0.42
Flint	81	25	49.5	0.63
Fremont	80	25	48.6	1.32
Gaylord	76	26	46.4	1.78
Glenwood	70	25	48.9	0.93
Grand Rapids[1]	84	26	51.0	1.26
Grape	78	28	51.9	0.27
Grayling	76	25	45.4	0.40[7]
Hanover	77	25	50.3	0.61
Harbor Springs	79	29	47.2	2.10
Harrison[7]	79	25	45.8	1.46
Harrisville	74	24	46.2	1.61
Hart	75	20	47.5	2.90
Hayes	76	28	49.0	1.18
Highland Station	.....	.....	.....	0.59
Hillsdale *[1]	81	23	49.7	0.60
Howell	80	23	49.1	0.59
Ivan	80	27	46.6	2.59
Jackson *	74	26	48.9	.....
Jeddo	79	29	49.4	0.84
Kalamazoo	78	31	51.9	0.31
Lake City	.....	.....	.....	1.40
Lansing[1]	78	27	48.7	1.00
Lathrop *[1] [b]	76	26	45.2	4.27

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Michigan—Cont'd.	°	°	°	*Ins.*
McMillan f	78	81	45.4	2.79
Madison	79	26	49.9	0.25
Marshall[1]	78	23	48.9	0.45
Mayville	79	27	49.3	1.21
Montague [b]	.....	.....	48.4	.....
Mottville	83	24	51.4	0.55
Noble[2]	.....	.....	48.4	0.57
North Marshall	78	20	47.2	0.11
Olivet	79	28	48.8	0.45
Ovid	76	24	48.7	0.84
Paris	78	19	45.8	1.11
Parkville	.....	.....	.....	0.63
Rawsonville	80	26	51.5	0.75
Rockland[1]	82	28	46.6	4.04
Romeo	78	28	49.8	0.84
Saint Ignace	65	29	45.0	1.61
Sand Beach	80	28	49.6	3.46
Stockbridge	.....	.....	.....	0.70
Thornville[1]	78	31	50.2	0.91
Vandalia	74	28	51.0	0.64
Vienna	.....	.....	.....	1.72
Washington	79	30	50.2	0.47
Weldon Creek	79	19	48.5	1.46
White Pigeon*[2]	78	20	47.4	0.47
Williamston*[1]	80	30	51.4	1.10
Ypsilanti	79	26	48.8	0.73
Minnesota.				
Albert Lea †[1]	83	21	47.6	1.71
Alexandria †	.....	.....	.....	0.10
Alma City †[1]	85	16	49.3	0.48
Bird Island	87	19	50.1	T.
Blooming Prairie*[1]	90	23	51.1	1.55
Cambridge †	75	14	46.4	0.24
Camden †	88	13	51.1	0.37
Clear Lake [c] [1]	82	17	47.9	.....
Crookston †	87	16	49.4	0.11
Eagle Bend †	.....	11	.....	.....
Farmington [1]	84	20	50.0	0.25
Fergus Falls*†[1]	80	20	48.8	0.27
Fort Ripley †	.....	.....	.....	0.44
Grand Meadow*[1]	79	20	47.5	2.49
Granite Falls	90	14	51.3	0.00
Holland*†[1]	82	18	48.4	.....
L Winnibigoshish*[1]	81	24	45.3	0.21
Leech Lake [1]	80*	13	44.4	0.18
Long Prairie*[4]	.....	14	43.3	.....
Maple Plain*[2]	83	23	47.3	0.07
Minneapolis †[1]	83	20	49.3	0.42
Montevideo †	87	13	52.0	0.42
Morris[1]	85	19	48.7	0.18
Northfield †[1]	84[d]	19[d]	49.0	0.59
Ortonville †	.....	.....	.....	0.09
Pine River*[1]	81	28	47.2	0.33
Pokegama Falls [1]	74*	12	43.8	0.28
Redwood Falls †	.....	.....	.....	0.05
Rolling Green †[1]	83	17	49.6*	0.29
Saint Charles †[1]	81	19	48.6	1.40
Saint Oloff[1]	79	23	47.3	0.25
Sandy Lake Dam[1]	80*	14	45.2	0.30
Sheldon [2]	.....	.....	46.2	1.59
Wabasha [2]	.....	.....	51.0	1.87
Mississippi.				
Aberdeen †	85	28	61.0	0.00
Agricult'ral Col'ge[1]	85	36	66.2	T.
Batesville †	84	30	63.0	0.00
Brookhaven †	96	28	66.3	0.87
Canton †	87	34	65.6	0.12
Columbus *a* †	.....	.....	.....	0.00
Corinth †	84	32	62.3	0.00
Crystal Springs †	92	35	70.6	0.34
Edwards †	89	34	67.7	0.30
Fayette †	89	37	68.4	0.38
Greenville	83	40	65.8	0.80
Hattiesburg*†[1]	88	40	70.6	2.03
Haslehurst †	90	37	65.6	0.20
Hernando †	87	32	65.8	0.07
Holly Springs †	84	32	63.8	0.00
Jackson †	87	34	67.2	0.03
Kosciusko †	87	31	65.0	0.00
Lake †	86	31	64.4	0.42
Logtown †	87	39	68.6	3.67
Louisville †	95	26	65.6	0.00
Macon †	88	36	68.8	0.02
Moss Point †	86	40	67.4	4.20
Natchez †	90	34	68.9	0.60
Okolona †	85	30	63.0	0.00
Palo Alto †	86	35	65.4	0.06
Pontotoc †[1]	85	32	63.9	T.
Port Gibson †	92	26	66.2	0.42
Rolling Fork †	84	34	65.6	0.01
Ship Island †	88	51	72.8	3.75
Vaiden †[1]	97	25	63.3	0.06
Water Valley*[1]	92	34	63.9	0.06
Yazoo City †	.....	.....	.....	0.33
Missouri.				
Adrian †	92	20	53.9	2.30
Appleton City †	88	29	57.6	2.81
Arthur	.....	.....	.....	1.60
Ava	.....	.....	.....	4.26
Bethany	85	25	55.4	2.56
Boonville †	.....	.....	.....	2.13
Brunswick	83	28	57.8	2.10
Canton	.....	.....	.....	1.04
Cape Girardeau †	.....	.....	.....	2.80
Carrollton †	83	31	56.4	2.30
Carthage †	.....	.....	.....	4.20
Chillicothe [a]	92	28	58.9	3.64
Clinton*[1]	85	28	56.2	2.00
Conception[1]	84	28	58.4	2.17
Concordia*	86	.....	.....	1.50
Cowgill	.....	.....	.....	2.68
Dadeville †	.....	.....	.....	3.23
Darksville †	84	26	58.8	1.37
East Lynne*[1]	86	30	57.5	2.63
Edge Hill	82	24	55.5	4.04
Eldon*[1]	88	32	58.5	2.56
Fayette	88	25	58.4	1.61
Fox Creek*[1]	84	30	58.8	2.05
Fulton	.....	.....	.....	2.14
Gainesville	85	26	59.4	4.22
Gallatin*†[1]	85	31	58.9	5.10
Galt	.....	.....	.....	2.50
Gayoso	.....	.....	.....	0.21
Glasgow[1]	85	26	56.6	1.48
Glensted	.....	.....	.....	2.45
Gordonville*†[1]	88	28	59.2	2.30
Gorin	.....	.....	.....	0.87
Grove Dale	90	27	60.2	2.28
Harrisonville †	85	27	57.5	2.42
Harviell	.....	.....	.....	1.34
Hermann*†[2]	81	28	55.6	2.20
Houston	86	23	58.2	3.30
Independence	.....	.....	.....	2.00
Irena	.....	.....	.....	2.80
Ironton	.....	.....	.....	3.30
Jefferson City †	86	28	58.4	2.35
Jerome †	.....	.....	.....	2.18
Kidder	84	26	55.1	5.15
Lamar †	84	30	58.6	4.80
Lamonte †	.....	.....	.....	1.52
Langdon †[1]	90	25	54.3	2.00
Lebanon	83	28	57.8	3.08
Lexington †	86	30	58.2	3.10
Liberty	84	26	56.9	2.11
Linneus*[1]	88	30	60.3	2.07
Louisiana Bridge †	.....	.....	.....	0.32
McCune*[1]	86	23	54.5	0.95
Mansfield	.....	.....	.....	3.77
Marble Hill	84	26	58.4	2.70
Marshall †	.....	.....	.....	1.53
Mexico †	86	25	56.3	1.43
Mine La Motte	86	26	58.5	3.45
Mount Vernon	.....	.....	.....	3.62
Neosho	85	28	58.2	4.80
New Boston	83	16	54.0	1.36
New Hartford	.....	.....	.....	1.86
New Haven*[1]	82	26	55.8	2.33
New Palestine	.....	.....	.....	1.76
Oakfield	84	29	58.0	2.14
Oak Ridge*[4]	92[j]	29[f]	54.3[g]	2.60
Olden	87	26	59.8	4.08
Oregon *a*	88	30	58.0	1.66
Oregon *b* †[1]	91	29	56.4	1.58
Oto	.....	.....	.....	4.05
Paris	.....	.....	.....	0.58
Phillipsburg*[1]	80	31	57.6	4.33
Pickering*[1]	93	26	61.2	2.77
Platte River*[3]	84	26	51.7	2.60
Poplar Bluff	86	25	58.8	1.49
Princeton[1]	86	26	55.7	2.40
Rea*[1]	85	26	54.3	1.50
Rolla †	.....	.....	.....	2.62
Saint Charles *b*	87	30	58.5	1.97
Saint Joseph †	.....	.....	.....	1.79
Saint Louis *a*	88	25	57.1	1.78
Saint Louis *b*	90	27	58.5	1.49
Sedalia	86	29	58.8	2.04
Shelbina	.....	.....	.....	1.20
Stanberry*[3]	83	28	52.4	1.94
Steelville*[1]	80	21	52.1	2.38
Stellada †	90	25	59.2	1.80
Vancleve	.....	.....	.....	2.78
Vermont*†[1]	83	29	55.8	1.92
Warrensburg*[1]	84	32	58.3	1.64
Warrenton	84	27	57.4	2.29
Wellsville	.....	.....	.....	1.27
West Plains	.....	.....	.....	3.30
Wheatland	.....	.....	.....	2.18
Whiteside	95	25	59.7	2.40
Withers Mills*	82	34	.....	0.80
Montana.				
Bozeman †	73	24	44.4	1.81
Camp Poplar River	88	17	48.8	T.
Cokedale	.....	.....	.....	1.23
Deer Lodge City †	84	20	46.6	0.02
Fort Custer	89	24	52.0	1.53
Fort Keogh	90	19	49.4	1.10
Fort Logan †	75	15	41.0	0.51
Fort Missoula	83	17	45.2	0.60
Glendive †	87	19	51.9	0.20
Great Falls †	86	18	49.3	0.03
Hogan	82	18	47.6	0.19
Horr †	75	22	45.0	0.67
Martinsdale †[1]	74	14	46.0	0.49
Virginia City †	72	21	44.5	1.06
Nebraska.				
Agee*[2]	96	20	53.6	0.71
Ansley †[1]	89	12	48.1	1.82
Arborville*[1]	91	21	52.3	1.38
Arcadia	.....	.....	.....	2.03

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Nebraska—Cont'd.	°	°	°	*Ins.*
Ashland*[1]	88	25	55.1	0.88
Ashton	93	19	54.4	1.92
Bassett*[1]	94	20	51.9	1.10
Beatrice †	87	23	54.4	0.58
Bookwalter	.....	.....	.....	0.50
Brandon	.....	.....	.....	1.40
Callaway †	89	17	51.8	1.55
Cornlea*	91	.....	.....	1.31
Creighton*†[1]	90	15	49.7	0.99
Crete[1]	90	23	56.0	1.13
Culbertson *a* †	.....	.....	.....	0.91
David City*†[2]	84	22	54.0	1.15
De Soto*[1]	90	26	55.4	1.71
Dunning*[1]	84	31	54.9[d]	0.02
Ericson*†[1]	91	21	53.4	2.17
Ewing*†[1]	94	23	52.6	0.90
Fairbury*	90	.....	.....	0.63
Falls City †	.....	.....	.....	0.88
Fort Robinson	94	24	50.6	4.74
Fort Sidney	88	22	48.4	3.53
Franklin	89	22	54.9	1.72
Fremont*[1]	88	22	55.1*	0.98
Genoa †[1]	89	25	54.1	1.36
Gering †	92[d]	25[d]	49.8[d]	1.75
Haigler*[1]	88	30	50.8	T.
Hartington †	94	15	53.8	0.74
Hastings*†[1]	84	30	58.4	1.75
Hayes Center*†[1]	92	33	54.0	0.96
Hebron*†[1]	88	22	54.9	1.08
Holdrege[2]	.....	22	50.5	1.38
Imperial*[1]	91	30	53.6	2.00
Indianola	.....	.....	.....	0.63
Kennedy*†[1]	85	21	50.5	3.83
Kimball †	89	23	48.2	2.30
Lexington †	95	19	55.4	1.96
Lincoln[1]	88	25	56.4	0.78
Marquette*	88	24	.....	2.07
Minden*[1]	86	26	53.2	2.16
Nesbit	.....	.....	.....	2.05
Norfolk †[1]	86	20	53.5	1.03
North Loup †[1]	88*	18	54.8	1.61
Oakdale †[1]	92	18	50.8	0.98
O'Neill*[1]	89	22	52.4	0.90
Ough †	.....	.....	.....	1.79
Plattsmouth †	.....	.....	.....	1.13
Ravenna	88	19	53.0	1.83
Santee Agency †	91	21	55.5	1.02
Springview	89	24	54.5	1.11
Stanton	90	18	54.8	0.97
Superior*[1]	92	25	56.3	1.70
Syracuse*[1]	90	27	56.2	0.90
Table Rock*†[1]	94	24	57.5	0.77
Tekamah	88	20	54.7	1.33
Turlington*[1]	95	27	59.6	0.80
Wallace	.....	.....	.....	0.85
Weeping Water*[1]	89	16	52.3	0.24
West Point †	86	18	54.2	1.38
Whitman*[1]	82	28	51.9	0.00
Wilcox *a*	.....	.....	.....	2.00
York*[1]	94	24	54.3	1.27
Nevada.				
Austin	78	18	46.9	0.24
Battle Mountain*[1]	80	28	51.7	0.35
Belleville*[1]	80	28	44.3	0.60
Belmont	74	15	45.1	0.45
Beowawe*[1]	85	13	47.1	0.00
Browns*[1]	80	33	53.0	0.30
Candelaria	78	25	50.0	0.55
Carlin*[1]	85	15	45.8	0.00
Carson City [1]	84	18	47.6	0.30
Cranes Ranch	.....	.....	.....	0.30
Downeyville	.....	24	.....	0.11
Elko*[1]	80	18	44.8	0.30
Ely	74	3	38.0	0.66
Empire Ranch †	81	25	52.4	0.21
Fenelon*[1]	95	18	48.3	0.00
Golconda*[1]	80	28	49.9	0.00
Halleck*[1]	84	14	43.3	0.05
Hawthorne *a*[1]	82	36	54.1	0.52
Hawthorne *b*	84	24	51.9	0.52
Hot Springs*[1]	84	24	51.4	0.09
Humboldt*[1]	78	30	51.7	0.06
Lewers Ranch	82	19	50.8	0.93
Lovelock*[1]	82	35	52.4	0.00
McDermitt	87	6	44.4	0.28
Mill City*[1]	90	24	49.0	0.10
Monitors Ranch	80	10	42.4	0.35
Palisade*[1]	85	20	49.0	0.00
Palmetto	82	12	45.8	0.54
Pioche	91	24	53.0	0.13
Reno*[1]	80	27	52.2	0.10
Reno State Univ'sy[1]	82	21	47.8	0.27
Saint Clair	80	23	48.9	0.22
South Camp †	74	20	45.5	0.68
Stofiel	80	7	39.6	0.56
Sunnyside	90	2	46.8	T.
Tecoma*[1]	70	23	43.0	0.00
Toano*[1]	73	23	47.2	0.10
Tybo	87	20	50.6	0.17
Verdi*[1]	80	23	47.0	T.
Virginia City	.....	23	.....	1.11
Wabuska*[2]	88	30	53.0	0.25
Wadsworth*[1]	84	24	44.9	0.00
Wells*[1]	68	18	41.8	0.05
Winnemucca*[1]	79	30	51.5	0.00
New Hampshire.				
Antrim	.....	.....	.....	0.95
Berlin	69	20	42.2	.....
Berlin Mills	69	21	42.8	2.07
Brookline	.....	.....	.....	0.77
Concord *a*	73	28	47.8	1.29
East Canterbury	68	28*	45.6*	1.31
Grafton	70	25	46.4	1.72
Hanover *a*[1]	69	27	46.4	1.54
Littleton [1]	67	24	42.8	2.81
Manchester[1]	73	28	48.9	1.19
Nashua	76	26	48.8	1.09
Newton	75	26	48.0	1.33
North Conway	71	22	45.2	1.79
Peterboro	72	22	45.9	0.60
Plymouth [1]	71	25	43.5	1.90
Sanbornton	71	28	46.2	1.56
Stratford	77	22	47.4	2.17
Walpole	72	26	46.1	1.10
West Milan	68	20	42.7	1.88
New Jersey.				
Allaire	79	21	51.5	.....
Asbury Park	77	31	52.9	0.28
Bayonne	82	32	55.1	0.64
Belleville	.....	.....	.....	0.70
Belvidere	77	26	50.3	0.33
Beverly †[1]	84	26	51.0	0.35
Bivalve	82	30	.....	0.17
Blairstown*	82	24	46.4	0.61
Boonton	.....	.....	.....	0.61
Bridgeton *a*	80	35	55.3	0.55
Bridgeton *b* [1]	84	36	60.2	0.51
Butler	.....	.....	.....	0.98
Camden	79	32	54.6	0.39
Cape May †	80	31	56.0	0.67
Deckertown	75	29	50.9	0.88
Dover	78	24	50.4	0.48
Egg Harbor City [1]	81*	27*	52.3*	0.25
Elizabeth †	75	32	53.4	0.57
Franklinville	80	24	51.8	0.46
Freehold	76	33	54.0	0.46
Friesburg	.....	.....	.....	0.42
Gillette	78	28	51.4	0.65
Hammonton	.....	.....	.....	0.41
Hanover	76	27	51.4	0.67
Highland Park †	77	28	53.2	0.55
Hightstown	77	30	52.9	0.45
Imlaystown	78	30	54.0	0.64
Junction	.....	.....	.....	0.38
Locktown	78	32	53.2	0.46
Moorestown [1]	80	30	52.2	0.38
Mount Holly	79	29	54.1	.....
Newark *a*	75	35	53.9	0.64
Newark *b*	78	35	54.4	0.60
New Brunswick *a*	81	28	55.0	0.54
New Brunswick *b*	75	29	53.2	0.59
Newton †	75	26	49.4	0.63
Ocean City [1]	76	33	55.5	0.33
Oceanic	76	35	55.1	0.50
Paterson	83	33	55.7	0.77
Pensauken	.....	.....	.....	0.35
Plainfield	84	26	53.4	1.09
Rancocas*[1]	82	31	51.5	0.43
Readington*[6]	80	36	57.2	.....
River Vale*[1]	87	24	55.6	0.89
Salem [b]	80	34	55.1	0.40
Somerville	85	26	56.0	0.04
South Orange †[1]	77	32	51.6	0.77
Tenafly	80	28	52.6	0.93
Toms River	80	25	53.9	0.25
Trenton*[1]	78	30	53.4	0.42
Vineland	81	30	54.5	0.33
Whiting	82	25	54.6	0.16
Woodbine *c*	83	25	56.0	0.69
New Mexico.				
Albert †	89	36	58.4	1.95
Albuquerque †	85	30	54.0	2.21
Chama †	90	12	48.2	2.00
Coolidge †	80	20	45.7	0.17
Deming*[1]	88	40	60.5	1.21
East Las Vegas †	84	15	48.7	1.31
Estalina Springs †	78	19	47.4	1.51
Fort Bayard	85	28	55.0	0.47
Fort Wingate	88	25	50.9	1.39
Gallinas Spring †	84	26	53.6	2.32
Halls Peak †	80	9	44.4	1.37
Hillsboro †	88	34	57.0	0.64
Hills Ranch †[1]	88	23	53.3	1.01
La Luz †	79	40	60.6	1.65
Lordsburg*[1]	88	41	62.0	0.69
Los Lunas †	92	20	54.0	2.80
Monero †	81	9	45.6	0.83
Olio †	86	15	49.2	0.87
Pojuaque	.....	.....	.....	0.58
Socorro †	88	30	57.6	0.51
Springer †	84	19	49.4	1.73
Taos †	89	13	48.2	0.85
New York.				
Adams Center	.....	.....	.....	2.10
Addison[1]	74	26	47.3	1.50
Akron	.....	.....	.....	2.10
Alfred Center	74	25	44.6	1.44
Arcade [1]	72	26	45.4	3.63
Arkwright	67	35	48.4	.....
Avon	.....	.....	.....	1.42
Baldwinsville [1]	71	34	49.0	3.46

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
New York—Cont'd.	°	°	°	*Ins.*
Bedford	.....	.....	.....	0.70
Bethlehem Center	.....	.....	.....	0.87
Binghamton †[1]	73	26	47.0	1.54
Bloods Depot	.....	.....	.....	2.66
Bolivar	.....	.....	.....	2.21
Brookfield[1]	69	26	45.0	2.88
Canaseraga[1]	72	26	46.1	1.90
Canton †[1]	70	26	46.0	1.61
Chenango Forks	.....	.....	.....	1.08
Cherry Creek	.....	.....	.....	5.12
Constableville †[1]	68	28	43.7	1.83
Cooperstown[1]	68	29	45.9	1.79
Cortland	70	31	47.7	2.31
De Kalb Junction	.....	.....	.....	1.69
Demster	.....	.....	.....	3.53
Deposit	.....	.....	.....	1.60
Dunkirk *b*	71	37	50.6	1.77
Easton	.....	.....	.....	1.71
Eden Center	75	28	50.5	3.73
Elmira *†	73	34	51.1	1.30
Factoryville †[1]	79	26	47.9	1.35
Fleming[1]	82	30	48.7	2.40
Fort Niagara	75	36	53.0	0.69
Geneva †[1]	76	33	49.3	1.50
Glens Falls	71	29	47.0	1.79
Gloversville[1]	72	29	43.8	1.55
Hess Road Stat'n †[1]	73	31	48.9	1.84
Honeymead Brook[1]	71	29	47.9	0.92
Humphrey †[1]	80	29	48.3	3.65
Ithaca[1]	73	32	50.0	1.52
Jamestown *†[1]	80	35	49.0	.....
Kings Station	.....	.....	.....	1.30
Lebanon Springs	72	27	46.8	1.43
Le Roy	74	31	47.9	1.60
Little Valley	.....	.....	.....	5.79
Lowville[2]	.....	.....	42.4	1.91
Lyndonville	.....	.....	.....	1.83
Lyon Mountain	65	30	42.5	.....
McLean	.....	.....	.....	2.53
Madison Barracks	71	34	50.0	2.00
Malone[1]	69	22	44.6	2.51
Marshland †	70	27	43.2	.....
Middletown	74	33	49.7	0.70
Minnewaska[1]	69	29	46.5	0.85
Mount Morris	74	24	48.4	1.33
Newark Valley	.....	.....	.....	1.84
New Lisbon *[1]	69	26	44.2	1.61
N'th Hammond †[1]	68	30	48.3	1.39
Number Four †	66	24	42.5	3.47
Ogdensburg *[1]	71	35	48.3	0.97
Oxford	68	28	45.3	1.62
Palermo †[1]	68	29	47.6	2.93
Perry City[1]	78	30	45.9	1.64
Phœnix	.....	.....	.....	3.33
Plattsburg B'ks	73	28	46.0	1.12
Port Jervis	73	27	48.6	0.61
Potsdam	69	26	45.3	1.78
Poughkeepsie	77	23	50.0	0.88
Quaker Street	68	30	45.8	1.00
Romulus	73	32	49.9	1.34
Rondout †	72	34	52.3	0.89
Schodack Depot	.....	.....	.....	1.16
Setauket †[1]	75	38	53.5	0.90
South Canisteo[1]	74	24	45.3	2.44
South Kortright †	70	24	44.9	1.13
Utica	70	32	48.0	2.59
Wappingers Falls	.....	.....	.....	0.64
Watkins	82	31	50.9	1.22
West Chazy	.....	.....	.....	1.54
West Point	.....	.....	.....	T.
White Plains *[1]	73[e]	32	52.5[e]	.....
Willets Point	81	35	54.8	0.50
North Carolina.				
Asheville †	.....	.....	.....	0.29
Bakersville †	88	20	52.8	0.39
Bryson City †	.....	.....	.....	0.26
Chapel Hill †	90	30	59.8	0.27
Columbus	74	28	54.6	0.49
Currituck Inlet †	.....	.....	.....	0.64
Douglas	83	25	55.2	0.51
Fayetteville †	.....	.....	.....	0.34
Goldsboro †	88	33	61.2	0.73
Greensboro †	78	35	58.4	0.60
Horse Cove *†	76	27	55.6	0.62
Lenoir *[1]	76	29	54.9	T.
Lillington †	.....	.....	.....	0.37
Littleton †	86	29	56.0	0.70
Louisburg †[1]	80	32	56.4	0.36
Lumberton †	84	30	59.6	1.16
Marion	83	27	56.8	0.49
Morganton *†[1]	80	29	56.5	0.20
Mount Airy †	80	26	54.3	0.28
Mount Holly †	.....	.....	.....	0.02
Mount Pleasant[1]	84	27	57.1	0.28
Murphy †	.....	.....	.....	0.25
Newbern †	84	30	60.5	0.67
Oak Ridge †	82	31	57.4	0.78
Pittsboro	86	25	56.4	0.01
Rockingham †	91	30	62.8	0.37
Roxboro[2] †	81*[f]	34[d]	54.0*	0.64
Salisbury	80	33	60.2	0.53
Saxon †	84	22	53.3	0.90
Smithfield	84	28	58.8	0.37
Soapstone M't †	85	25	56.6	0.99
Southern Pines †	86	28	58.6	0.34

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
N. Carolina—Cont'd.	°	°	°	*Ins.*
Tarboro	88	28	58.9	0.90
Washington †	90	23	59.4	1.33
Weldon †	85	28	57.9	1.05
Willeyton	85	27	57.0	0.60
North Dakota.				
Ashley †	84	11	46.3	0.88
Carrington †	88	16	48.2	0.00
Churchs Ferry †	83	14	45.0	0.53
Dickinson †	84	17	46.6	0.24
Ellendale †	87	13	47.4	0.58
Fargo †	83	12	47.1	0.25
Forman †	84	16[m]	46.8[m]	0.36
Fort Stevenson †	85	18	46.9	1.45
Fort Yates	90	24	51.1	2.89
Gallatin *†	80	10	42.1	0.25
Grafton †	82	10	45.4	0.13
Grand Forks †[1]	78[e]	15[e]	45.2[e]	0.06
Grand Rapids †[1]	81	11	45.7	0.58
Jamestown †[d]	76	18	50.6	0.14
Lakota †	77	11	45.8	0.00
Lidgerwood †	.....	.....	.....	0.42
Medora †	95	15	51.2	0.63
Milton †	80	10	47.5	0.06
Minto †	83	14	47.4	0.06
Napoleon †[1]	80	14	46.7	1.13
Power †[1]	83[d]	18	50.2[d]	0.57
Reynolds	84	13	46.8	0.10
Saint Johns †	74	16	45.2	1.97
Wahpeton †	84	14	48.1	0.30
White Earth †	86	13	45.2	0.30
Wild Rice †[2]	.....	.....	43.7	0.09
Willow City †	87	13	45.5	1.33
Woodbridge †	92	7	47.5	0.50
Yule †	85	15	47.6	0.65
Ohio.				
Akron[1]	76	34	51.8	0.82
Annapolis	.....	.....	.....	0.66
Ashland	79	31	51.3	0.97
Athens[1]	83	26	50.3	0.77
Auburn	.....	.....	.....	1.90
Bangorville[1]	83	24	51.7	0.46
Bellevue *[1]	80	24	49.7	1.30
Bement[1]	84	30	49.4	1.60
Bethany	.....	.....	.....	0.16
Big Prairie	.....	.....	.....	0.50
Bissells	.....	.....	.....	2.43
Bloomingburg	81	28	55.6	0.71
Caledonia †	.....	.....	.....	0.91
Cambridge	.....	.....	.....	0.65
Campbellstown	.....	.....	.....	0.24
Camp Dennison	.....	.....	.....	0.32
Canton †[1]	76	32	50.2	1.04
Cardington	.....	.....	.....	0.58
Carrollton	76	28	50.4[e]	0.81
Celina[1]	82	30	55.4	0.25
Cherry Fork	.....	.....	.....	0.68
Chicago	.....	.....	.....	1.18
Circleville †	.....	.....	.....	0.58
Clarksville[1]	84	29	52.7	0.53
Cleveland[1]	79	36	52.2	1.52
Coalton	.....	.....	.....	0.51
Colebrook	.....	.....	.....	1.97
Dayton[1]	82	27	54.0	0.37
Demos[1]	78	31	52.4	0.54
Ellsworth	.....	.....	.....	0.89
Elyria	81	32	52.8	0.93
Findlay[1]	83	23	51.2	0.79
Fostoria[1]	82	27	52.7	0.87
Frankfort	.....	.....	.....	0.35
Garrettsville[1]	76	28	47.8	1.50
Georgetown[1]	88	30	56.0	0.96
Granville	82	26	.....	0.38
Gratiot	82	27	52.8	0.56
Greenfield	80	25	49.6	0.71
Green Hill	.....	.....	.....	0.75
Greenville[1]	79	25	52.2	0.11
Hackney	.....	.....	.....	0.16
Hanging Rock[1]	85	27	52.7	0.50
Harbor[1]	76	35	51.8[e]	2.31
Hedges	.....	.....	.....	0.15
Hillhouse	.....	.....	.....	2.23
Hillsboro	.....	.....	.....	0.81
Hiram[1]	75	33	50.3	1.57
Jacksonboro *[1]	88	30	57.4	0.15
Kenton †	86	23	52.4	0.48
Killbuck	.....	.....	.....	0.98
Leipsic	.....	.....	.....	0.72
Levering	.....	.....	.....	0.50
Logan[1]	84	27	51.0	0.27
Lordstown[1]	75	28	48.5	0.79
Lowell	.....	.....	.....	0.20
McConnelsville[1]	83	24	51.9	0.43
McLuney	.....	.....	.....	0.20
Mansfield †	.....	.....	.....	0.98
Marietta *a* †	.....	.....	.....	0.67
Marietta *b*[1]	82	30	52.0	0.69
Marion[1]	89	21	50.3	0.74
Milfordton	.....	.....	.....	0.84
Millport	.....	.....	.....	0.77
Montpelier[1]	80	23	50.0	0.17
Mountville	.....	.....	.....	0.18
New Alexandria[1]	77	31	53.4	0.90
New Berlin	.....	.....	.....	0.79
New Comerstown[1]	80	25	49.5	0.95
New Holland	80	28	51.7	1.23

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Ohio—Cont'd.	°	°	°	*Ins.*
North Lewisburg[1]	85	26	53.6	0.40
North Royalton	.....	.....	.....	1.19
Oberlin[1]	82	29	50.6	1.03
O. S. University[1]	83	22	51.5	0.67
Orangeville	75	28	49.0	0.95
Pataskala	86	24	53.0	0.83
Plattsburg	.....	.....	.....	0.72
Pomeroy[1]	81	24	53.5	0.35
Portsmouth *a* †	.....	.....	.....	0.59
Portsmouth *b*[1]	85	28	53.2	0.59
Ridge	.....	.....	.....	0.41
Rittman	.....	.....	.....	1.01
Sharon Center	.....	.....	.....	0.78
Shenandoah	.....	.....	.....	1.06
Sidney †	.....	.....	.....	0.23
Springboro	.....	.....	.....	0.90
Strongsville	.....	.....	.....	1.62
Thurman	.....	.....	.....	0.61
Tiffin †[1]	81	29	51.6	1.20
Upper Sandusky[1]	82	27	52.9	0.70
Van Wert	82	20	51.0	0.54
Walnut	.....	.....	.....	0.64
Wauseon[1]	81	21	49.8	0.39
Waverly[1]	88	24	52.9	0.68
Waynesville	.....	.....	.....	0.77
Westerville[1]	80	25	51.2	0.30
West Milton *	82	28	.....	1.05
Weymouth	82	26	52.0	1.17
Wheeler †[2]	.....	.....	53.1	2.04
Wooster *a*[1]	81	25	48.9	0.37
Wooster *b* †	78	25	50.0	0.67
Youngstown[1]	75	30	51.9	0.79
Zanesville †	.....	.....	.....	0.63
Oklahoma Ter.				
Anadarko †	93	29	62.6	5.10
Buffalo †	98	.....	.....	1.95
Burnett †[1]	89	30	60.0	5.41
Fort Reno †	82[h]	34	56.9[h]	5.21
Fort Sill	93	33	61.1	5.69
Gate City †[1]	94	32	56.6	2.03
Guthrie †[1]	95	31	63.4	6.30
Keokuk Falls †[1]	92	28	60.7	6.84
Kingfisher †	.....	.....	.....	3.30
Mangum †	95	38	64.0	4.49
Sac & Fox Agency †	91	29	61.4	4.09
Oregon.				
Albany *a* †[1]	82	33	49.8	2.60
Albany *b* *[1]	80	36	53.8	2.23
Arlington	86	30	53.3	0.38
Ashland *a* *[1]	77	31	51.9	1.46
Ashland *b*	84	33	53.5	1.63
Aurora *[1]	85	36	51.0	2.36
Bandon *[4]	82	40	52.8	5.32
Brownsville *[1]	80	32	53.0	2.95
Comstock *[1]	78	35	51.3	2.27
Corvallis *a*	80	30	51.2	2.05
Corvallis *b* *[1]	72	34	52.9	1.79
East Portland *	74	35	.....	2.53
Eugene	.....	.....	.....	2.41
Forest Grove	79	33	53.0	2.97
Glenora	81	32	52.8	6.32
Grants Pass *a* †	90	27	53.0	2.16
Grants Pass *b* *[1]	98	32	58.7	2.38
Heppner †	83	28	51.8	1.14
Hood River (near)	73	32	50.8	2.12
Jacksonville	80	30	51.8	1.38
Joseph †	79	20	45.6	1.73
Junction City *[1]	78	38	54.4	0.46
Lafayette *[1]	80	32	54.6	1.92
La Grande †	84	26	51.4	0.75
Lakeview †	.....	18	.....	1.99
Langlois	86	40	59.7	4.99
Leland *[1]	90	33	50.2	2.41
Lone Rock	76	24	45.4	1.28
McMinnville *a* †	82	29	53.2	2.72
McMinnville *b* *[1]	82	34	52.0	2.44
Monmouth *[1]	80	33	.....	6.13
Newberg	80	36	54.8	2.59
New Bridge	93	15	52.3	0.39
Portland *[1]	82	40	48.3	2.14
Riddles *[1]	86	36	52.7	1.57
Roseburg *[1]	87	40	56.3	1.59
Sheridan *[1]	79	32	53.1	2.35
Silverton *[1]	80	30	51.8	2.19
Siskiyou *[1]	75	33	50.1	1.33
Springfield *[1]	80	32	51.2	2.72
The Dalles †	82	32	53.2	0.90
Toledo	82	33	57.2	7.46
Vale	82	19	47.4	0.21
Vernonia *[1]	82	32	51.2	3.15
Wagner	85	22	49.9	0.69
West Fork *[1]	79	36	53.2	2.38
Williams	83	29	51.1	1.70
Pennsylvania.				
Aqueduct *[1]	78	33	52.7	T.
Blooming Grove *[1]	73	29	47.3	0.40
Blue Knob *[1]	72	28	47.0	0.88
Brookville †	.....	.....	.....	0.48
Carlisle[1]	79	30	49.9	0.05
Clarion †	.....	.....	.....	1.46
Coatesville[1]	83	27	49.8	0.48
Confluence †	.....	.....	.....	0.90
Coopersburg[1]	74	35	51.5	0.60
Corry	80	25	48.0	2.79
Davis Island Dam †	.....	.....	.....	0.54

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Pennsylvania—Con.	°	°	°	*Ins.*
Doylestown	.....	.....	.....	0.17
Drifton *	72	28	48.7	1.38
Du Bois †	.....	.....	.....	0.92
Dyberry †[1]	76	23	44.4	0.82
East Mauch Chunk	78	24	50.5	0.82
Easton[1]	75	29	50.6	0.54
Edinboro *[1]	79	33	48.2	.....
Emporium[1]	78	28	50.6	1.35
F'ks of Neshami'y[1]	.....	.....	52.8	0.49
Frederick	.....	.....	.....	0.32
Freeport †	.....	.....	.....	0.58
Girardville[1]	72	29	49.0	0.41
Grampian[1]	72	30	47.4	0.59
Greensboro †	.....	.....	.....	0.83
Hamburg	82	26	52.3	0.37
Hollidaysburg[1]	78	21	49.9	0.29
Honesdale[1]	71	26	47.4	0.82
Huntingdon †	81	25	50.8	0.12
Indiana[1] †	76	24	49.2	1.02
Johnstown †	79	27	51.3	0.88
Kane	74	27	48.2	2.32
Kennett Square[2]	.....	.....	49.3	0.43
Kilmer[1]	79	35	57.5	0.24
Lancaster	79	33	52.4	0.30
Lansdale	.....	.....	.....	0.55
Lebanon[1]	78	28	52.1	0.29
Le Roy †	76	29	49.0	0.91
Lewisburg	77	24	50.6	0.22
Ligonier[1]	79	28	50.2	0.51
Lock Haven †[1]	79	27	49.6	0.38
Lock No. 4 †	.....	.....	.....	0.58
McConnellsburg[1]	82	24	51.5	0.00
Mahoning †	.....	.....	.....	0.75
Meadville[4]	80	32	50.2	2.41
Newcastle †[1]	78	25	52.3	0.57
Oil City †	.....	.....	.....	1.14
Ottsville	.....	.....	.....	0.48
Parker †	.....	.....	.....	0.85
Philadelphia *a*	.....	.....	.....	0.32
Philadelphia *b*	82	36	57.3	0.44
Philadelphia *c*	79	34	55.3	0.48
Phœnixville	81	29	53.8	0.35
Point Pleasant	.....	.....	.....	1.00
Pottstown	79	28	53.4	0.32
Quakertown[1]	78	22	49.1	0.03
Reading †[2]	.....	.....	49.9	0.20
Ridgway †	.....	.....	.....	1.26
Saegerstown	76	25	47.1	2.93
Salem Corners[1]	74	28	46.0	0.93
Saltsburg †	.....	.....	.....	0.57
Seisholtzville	.....	.....	.....	0.61
Selins Grove[1]	76	23	50.3	0.37
Smiths Corners	.....	.....	.....	0.45
Somerset[1]	76	28	45.8	0.32
South Eaton	73	28	49.8	0.77
State College[1]	75	31	49.6	0.28
Stoyestown †	.....	.....	.....	0.98
Swarthmore	80	31	54.3	0.30
Uniontown †[1]	78	31	53.0	1.05
Warren †	.....	.....	.....	2.36
Wellsboro *†	75	16	43.3	0.33
West Chester	78	33	54.0	0.36
West Newton †	.....	.....	.....	0.49
Westtown	77	28	52.1	0.30
Wilkesbarre †	75	27	50.5	0.72
Wysox[1]	74	27	46.7	1.02
York	81	26	52.3	0.14
Rhode Island.				
Bristol[1]	74	35	52.0	1.15
Kingston *a*	77	29	49.9	1.51
Kingston *b*[1]	76	30	50.4	1.64
Lonsdale	.....	.....	.....	1.49
Newport	74	40	53.6	.....
Olneyville	76	38	54.6	.....
Pawtucket[1]	78	30	52.2	1.64
Providence *a*	77	34	52.0	1.36
Providence *b*	79	27	51.2	1.49
Providence *c*	78	33	50.5	1.45
South Carolina.				
Aiken[1]	82	33	61.8	0.23
Allendale †	85	33	65.0	0.35
Anderson †	.....	.....	.....	0.29
Batesburg †	82	34	64.1	0.40
Blackville †	86	32	65.0	0.87
Camden †	.....	.....	.....	0.57
Cheraw *a* †	84	27	60.6	0.69
Cheraw *b* †	.....	.....	.....	0.37
Effingham †	.....	.....	.....	0.78
Florence †	84	34	63.2	0.48
Greenville †	85	26	60.4	0.27
Greenwood †	86	34	62.8	0.68
Hardeeville †	84	38	65.7	1.78
Kingstree †	86	34	63.6	0.89
Kitchings Mills †	82	35	63.8	0.32
Longshore †[1]	82	32	62.5	0.52
Mount Carmel †	.....	.....	.....	0.31
Nichols †	.....	.....	.....	0.64
Port Royal *†[1]	82	42	66.3	0.73
Saint Georges †	84	32	64.2	0.65
Saint Matthews †	84	36	65.0	0.81
Saint Stephens †	.....	.....	.....	0.87
Simpsonville †[1]	82	33	60.5	0.34
Society Hill †	83	32	61.2	0.33
Spartanburg †	84[d]	22[d]	65.8[d]	0.00
Statesburg †[1]	82	37	62.3	0.19

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
S. Carolina—Cont'd.	°	°	°	*Ins.*
Tillers Ferry †	.....	.....	.....	0.24
Trial	89	32	64.6	0.75
Wateree †	.....	.....	.....	0.61
Winnsboro	85	27	61.0	0.27
South Dakota.				
Aberdeen †	91	18	50.1	1.17
Alexandria †	94	15	53.4	1.19
Asheroft †	92	12	46.3	0.65
Bowdle *† [1]	90	21	50.7	1.08
Brookings †[1]	92	9	49.2	0.53
Carthage	.....	.....	.....	0.92
Castlewood †	85	9	47.5	0.54
Cross †	89	20	47.1	3.00
De Smet †[2]	.....	14	50.8	1.04
Faulkton †[1 2]	81	14	45.6	0.82
Flandreau †	91	13	51.0	0.05
Forestburg †	94	17	52.7	1.35
Forest City †	97	.....	.....	0.74
Fort Meade	96	16	48.9	2.46
Fort Randall	94	18	55.0	1.28
Fort Sully	96	22	54.8	0.74
Frankfort †	94	14	51.1	1.64
Gary †	85	18	51.2	0.14
Highmore †[1]	95°	20	52.4	0.75
Hotch City †	95	15	52.2	0.57
Kimball †	93	22	54.0	1.10
Mellette *[1]	88	18	50.5	1.62
Millbank †[1]	95	19	49.6	0.27
Mitchell †[1]	94	19	51.8	1.23
Oelrichs †	95	19	48.8	3.10
Onida †[1]	86	16	49.4	0.75
Parker †	92	13	52.2	0.36
Parkston †*	92	16	53.0	1.93
Piedmont	.....	.....	.....	2.58
Rosebud †	92°	22°	52.2°	3.24°
Salem †	90°	23°	55.6°	0.45
Sioux Falls †	90	12	51.6	0.39
Spearfish †[1]	90	24	50.6	2.81
Tyndall †	93	19	56.9	1.03
Webster †[1]	88	14	52.8	1.31
Wentworth †[1]	92	16	48.6	0.92
Wessington Sp'gs †	94	20	54.3	1.32
Wolsey *†[1]	93	17	50.3	1.65
Tennessee.				
Andersonville *[1]	80	29	59.8	0.40
Arlington †	88	26	60.4	0.45
Ashwood *†[1]	82	30	60.0	0.37
Austin *†[1]	83	22	58.9	0.23
Bethel Springs *[1]	81	31	66.3	0.51
Bolivar *a †	89	35	62.3	0.06
Bolivar *b [1 4]	82	38	62.0	0.06
Brownsville †	86	30	63.5	0.37
Byrdstown †	89	29	.....	0.10
Carthage †	.....	.....	.....	0.21
Charleston †	.....	.....	.....	0.44
Clarksville [1]	85	28	60.6	0.17
Columbia †	.....	.....	.....	0.28
Covington *a *†[1]	88	35	62.6	1.13
Covington *b †	96	28	63.8	0.59
Dunlap	.....	.....	.....	0.15
Dyersburg †	86	39	60.6	0.33
Fayetteville *[1]	84	32	63.4	0.53
Florence Station *[1]	83	40	59.0	0.26
Franklin *†[1]	84	28	57.8	0.39
Greeneville *[1]	79	27	54.9	0.97
Hohenwald *[1]	88	28	61.6	0.21
Jacksboro *[1]	.....	26	51.8	0.55
Jackson *[1]	83	32	59.3	0.10
Johnsonville †	.....	.....	.....	0.15
Kingston †	.....	.....	.....	0.53
Lookout Mountain †	78	34	57.6	0.15
Loudon †	.....	.....	.....	0.25
Lynnville *[1]	82	31	61.4	0.31
Milan †	85	28	61.2	0.26
Missionary Ridge *[2]	.....	37	58.6	.....
Newport *[1]	82	28	53.4	0.61
Nunnelly *[1]	83	31	60.5	0.36
Parksville *[1]	85	29	60.0	0.00
Riddleton †	87	24	59.3	T.
Rockwood †	.....	.....	.....	0.20
Rogersville *†[1]	80	29	55.8	0.66
Rugby *[1]	80	26	53.0	0.16
Savannah *[1]	84	26	56.8	0.12
Sharp *[1]	82	32	59.6	0.20
Springdale *[1]	88	22	59.4	0.55
Strawberry Plains †	.....	.....	.....	0.22
Waynesboro *[1]	79	28	56.2	0.08
Texas.				
Arthur City †	.....	.....	.....	4.44
Aurora *[1]	98	37	68.9	5.65
Austin *a †	90	34	68.8	3.40
Austin *b [5]	86	45	70.4	.....
Belton †	86	30	66.1	1.96
Big Spring	.....	.....	.....	4.50
Boerne *[2]	.....	40	65.4	4.23
Brady †	87	35	66.4	6.03
Brazoria †[1]	88	41	70.0	6.18
Brenham †	90	42	74.6	2.99
Brownwood †	90	38	68.4	5.22
Burnet *[2]	82	.....	64.6	2.52
Camp Eagle Pass	90	41	74.6	5.30
Camp P. Colorado	89	34	62.2	0.65
Childress †[1]	92	31	62.4	3.53
Coldwater †	.....	.....	.....	3.76
College Station	100	41	74.0	2.49

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Texas—Cont'd.	°	°	°	*Ins.*
Colorado *b*	.....	.....	.....	0.74
Columbia †	88	40	72.6	5.92
Corsicana *b* †	88	38	66.4	6.03
Cuero *b* †	89	40	75.0	5.34
Dallas *a* †[4]	92	37	60.2	3.83
Dallas *b* *†[1]	96	38	73.2	7.02
Devine	89	36	70.5	5.79
Duval *[1]	88	43	72.2	8.50
Epworth †[1]	88	42	56.9	3.93
Fay	.....	.....	.....	1.43
Floydada †	.....	32	.....	2.55
Forestburg †	94	38	67.6	5.17
Fort Brown †	92	.....	.....	1.58
Fort Clark	88	39	71.0	4.03
Fort Hancock	95	29	59.8	2.00
Fort McIntosh	90	41	72.4	1.25
Fort Ringgold	96	35	74.9	0.70
Fredericksburg †[1]	86	40	66.4	2.51
Gainesville †	92[d]	36°	66.2[f]	8.55
Graham †	94	36	67.2	4.73
Grape Vine †[1]	96	36	69.7	6.88
Hallettsville *†[1]	89	33	72.2	2.28
Hartley †	87	30	55.4	2.26
Hearne †	92	36	71.3	2.00
Highland	91°	38	68.8°	4.10
Houston †	88	39	70.4	3.17
Huntsville †	88	38	70.8	2.19
Kent	.....	.....	.....	1.42
Longview †	92	38	70.2	3.30
Luling †	90	37	70.2	3.07
Menardville *†[1]	86	36	65.6	7.60
Mesquite †	91	34	66.8	9.00
Mountain Spring †	96	38	67.3	7.37
Nacogdoches †	92	36	70.4	1.70
New Braunfels †	89	37	70.5	2.68
New Ulm [1]	92	42	71.8	2.60
Ochiltree †	.....	.....	.....	1.55
Orange †	90	54	76.1	4.96
Panter *†[1]	92°	40°	64.2°	5.12
Paris †	93	38	67.6	5.55
Quanah †	92	35	63.4	5.00
Red River City †	.....	.....	.....	7.51
Rio Grande City †	.....	.....	.....	0.29
Roby †	96	33	63.6	7.35
Round Rock †	90	42	70.6	4.36
San Antonio *b*	90	40	72.1	1.46
Sierra Blanca *a* †	90	33	61.8	1.05
Silver Falls †[1]	92	33	61.1°	3.63
Tyler †	88	35	66.6	4.02
Venus †	94	38	68.2	6.94
Victoria *†[1]	90	50	75.5	8.00
Waco †	92	40	70.4	5.00
Weatherford †	90	36	67.6	4.44
Utah.				
Blue Creek *[1]	79	31	51.3	0.20
Cisco †	88	18	52.8	1.22
Corinne *[1]	86	28	52.1	0.82
Deseret †[1]	82	12	46.8	1.12
Fillmore †	92	22	54.4	1.07
Grouse Creek †	.....	.....	.....	0.27
Kelton *[1]	84	25	48.6	0.50
Lake Park	77	29	49.7	1.34
Levan †[2]	.....	.....	44.7	1.80
Loa †	81	8	42.4	0.37
Losee †[1]	81	20	46.7	1.00
Moab †[1]	84	24	51.2	0.41
Mount Carmel *†[1]	86	19	50.6	1.51
Ogden *a* *[1]	82	38	56.4	4.05
Ogden *b* †[2]	.....	.....	53.5	1.80
Parowan †	.....	.....	.....	2.32
Promontory *[1]	75	22	48.8	0.35
Provo City †[2]	.....	.....	45.8	1.70
Richfield †[1]	78	18	46.0	0.72
Snowville †	84	17	48.0	0.81
Stockton †[2]	.....	.....	42.8	0.00
Terrace *[1]	89	29	56.0	0.00
Thistle †	84m	10	46.2m	0.67
Vermont.				
Brattleboro *a*	74	26	48.4	0.66
Burlington †	70	32	49.8	1.35
Chelsea *[1]	67	31	41.5	2.05
Cornwall	.....	.....	.....	0.68
Enosburg Falls †	72	21	44.8	2.56
Hartland †	71	22	44.0	1.73
Norwich *[1]	71	25	44.7	1.74
Saxtons River [1]	77	22	44.3	0.85
Simonsville	69	23	42.8	.....
South Royalton	.....	.....	.....	1.00
Strafford *[1]	65	30	45.3	1.90
Vernon *[6]	70	24	47.8	0.99
Wells	66	26	44.4	1.76
Virginia.				
Abingdon †	.....	.....	.....	0.53
Ashland [1]	83	28	55.0	0.60
Avon †	87	27	55.6	0.65
Bedford City †	78	32	55.2	0.29
Big Stone Gap †[1]	80	23	50.6	0.38
Birdsnest *†[1]	83	37	58.0	0.40
Charlottesville	84	29	56.1	0.55
Christiansburg †	.....	.....	.....	0.00
Clarksville †	.....	.....	.....	0.40
Clifton Forge	.....	29	.....	.....
Dale Enterprise †[1]	82	22	53.8	0.19
Danville †	.....	.....	.....	0.46
Hot Springs	78	24	50.2	0.22

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Virginia—Cont'd.	°	°	°	*Ins.*
Lexington †	82	23	53.0	0.20
Marion †	74[1]	24[1]	53.4[1]	0.55
Mossing Ford †[2]	.....	.....	54.8	0.55
Nottaway	88	27	56.1	0.73
Petersburg †	87	29	56.8	0.43
Richmond †	87	27	59.0	0.46
Salem †	83	34	58.4	0.24
Spottsville †[1]	83	28	54.1	0.39
Stanardsville †	83	33	56.0	0.42
Staunton †[1]	84	28	52.9	0.15
Woodstock †	.....	.....	.....	0.21
Wytheville †	74	25	52.0	0.15
Washington.				
Aberdeen †[1]	75	31	51.0	2.86
Chehalis †	78	33	51.4	1.94
Chelan †	77	32	51.2	0.59
Colfax †	84	23	50.4	0.67
East Sound †	69	38	50.6	2.18
Elbe †	.....	.....	.....	4.64
Ellensburg †	80	22	47.8	0.50
Fort Simcoe	84	32	53.6	0.78
Fort Spokane	80	23	48.2	0.72
Fort Townsend	68	33	50.0	1.96
Madrone †	72	34	51.6	3.00
Olga †[1]	67	39	51.2	2.60
Pine Hill *[1]	79	30	49.4	1.14
Pomeroy †	87	35	57.8	0.52
Rosalia †[1]	84	20	48.0	0.46
Seattle †	70	40	54.1	2.75
Tacoma †	82	31	50.4	2.60
West Virginia.				
Bluefield [1]	80	28	51.7	0.42
Buckhannon *a* †	.....	.....	.....	1.15
Buckhannon *b* †	79	24	50.0	.....
Central Station *†[5]	82	24	53.1	1.11
Charleston *a* †	.....	.....	.....	0.71
Danville *[2]	80	35	54.0	0.38
Davis	80	24	49.2	1.27
Elkhorn †	76	26	53.8	0.61
Ella †[1]	78	29	52.2	0.66
Fairmont †	.....	.....	.....	1.02
Glenville †	78	26	53.8	0.98
Grafton †	80	27	51.8	1.45
Harpers Ferry †	.....	.....	.....	0.00
Hinton †	.....	.....	.....	0.21
Huntington †	81	27	56.6	0.42
Kingwood *†[1]	76	30	48.8	1.50
Martinsburg †	81	37	57.6	0.21
Morgantown *a* †	.....	.....	.....	0.65
Morgantown *b* *†[1]	88°	29°	51.6°	1.30
New Cumberland	86	32	57.2	0.84
New Martinsv'le *†[1]	80	30	52.4	0.61
Nuttallburg	83	30	55.0	0.55
Philippi †	.....	.....	.....	1.45
Pleasant Hill *[2]	74	28	46.2	1.36
Point Pleasant †[1]	89	27	55.4	0.60
Rowlesburg †	.....	.....	.....	1.55
Tannery *[1]	79	26	49.4	.....
Weston †	.....	.....	.....	1.03
Wheeling *a* †	.....	.....	.....	0.84
Wheeling *b* †	80	34	55.8	0.82
White Sul. Springs †	.....	.....	.....	0.90
Wisconsin.				
Amherst	80	17	50.2	2.43
Appleton †	78	28	52.2	1.65
Baraboo †	76[d]	25[d]	50.0[d]	0.20
Barron †	77	16	46.0	1.80
Bayfield	75	28	49.1	1.32
Beaver Dam	78	24	54.0	1.55
Black River Falls †	80	14	48.7	1.29
Cadiz [2]	.....	.....	47.4	0.05

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Wisconsin—Cont'd.	°	°	°	*Ins.*
Centralia	79	26	49.4	1.56
Chippewa Falls †	.....	.....	.....	2.09
Columbus	82	15	48.4	1.05
Crandon †	77	20	44.9	2.53
Delavan (near) [3]	.....	30	46.6	0.84
Depere	78	25	49.8	1.41
Eau Claire *a*	79	24	50.0	1.70
Embarrass *†[1]	76	23	49.7	3.50
Florence †	78	20°	.....	2.55
Fond du Lac [1]	78	19	48.4	1.03
Harvey †	88	21	50.6	0.79
Hillsboro	78	16	48.6	1.24
Hudson	83	22	49.2	0.70
Janesville	79	20	53.2	0.15
Juneau †	79	19	50.2	0.80
Koepenick *†[1]	76	20	49.8	2.80
Lancaster †	81	22	51.0	0.99
Lincoln [2]	.....	.....	51.6	1.10
Madison	76	26	52.1	0.36
Manitowoc †[1]	69	24	50.1	1.33
Meadow Valley †	80	20	49.8	1.40
Medford *a* †	.....	.....	.....	1.72
Medford *b* †	76	18	46.8	2.38
Menomonie	83	19	49.2	2.60
Mineral Point	80	22	53.1	0.70
Neillsville †	76	17	47.8	2.27
Oconomowoc †	80	23	51.0	1.27
Oconto	80	22	49.4	1.94
Osceola †[1]	86	17	50.4	0.62
Oshkosh †	77	27	51.5	1.22
Pepin	77°	22	49.8	1.67
Portage †	.....	.....	.....	1.29
Port Washington	83	26	51.8	2.60
Prairie du Chien	86	19	53.8	1.26
Raymond	78	17	49.4	0.86
Reedsburg †*	81	19	49.0	.....
Richland Center †	79	18	49.6	1.05
Rhinelander	78	20	45.0	2.23
Sharon †[1]	78	21	49.6	0.88
Shawano	77	19	47.1	2.42
Shell Lake	79	23	48.6	0.79
Sparta *b* †[1]	84	18	49.3	1.60
Valley Junction †	78	17	48.7	1.81
Viroqua	76	25	51.6	1.10
Watertown	78	19	48.4	0.52
Waukesha †	.....	.....	.....	0.78
Westfield †	76	19	49.4	0.98
Weston *†[3]	86	20	43.7	2.07
Whitehall †	85	17	52.8	1.85
Wyoming.				
Camp Pilot Butte	83	12	42.7	0.55
Casper †	86	20	52.4	0.40
Evanston †	78	10	42.2	0.16
Fort McKinney	82	24	50.8	0.18
Fort Washakie	78	17	46.1	0.45
Fort Yellowstone	71	19	41.6	0.79
Lander	75	21	48.6	0.00
Laramie *b*	78	12	39.2	3.90
Lusk †	87	19	45.2	2.35
Saratoga †	78	13	40.8	1.60
Wheatland †	92	24	56.3	1.50
Mexico.				
La Logia	92	52	75.2	0.00
Leon de Aldamas [1]	81	40	63.6	8.21
Puebla [1]	75	39	61.5	4.44
Newfoundland.				
St. Johns	.....	.....	.....	1.64
West Indies.				
Grand Turk Island	.....	.....	.....	4.71
Hamilton, Ber [1]	79	63	70.7	13.55

Reports received too late to be used in general discussion of weather for October, 1892.

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Alabama.	°	°	°	*Ins.*
Livingston *b* †	87	28	64.4	0.16
Marion †	94	31	66.0	0.35
Thomasville †[a]	85	48	69.7	0.55
Union Springs *b* †	86	30	62.2	1.05
Alaska.				
Killisnoo †[1]	54	25	42.0	12.45
Arizona.				
New River †	96	42	69.0	1.67
Arkansas.				
Helena *b* †	86	32	64.6	0.27
California.				
Arlington Heights	95	39	65.8	0.09
Orangevale †	94	32	61.5	1.44
Riverside [c]	91	40	62.0	0.04
Ukiah	.....	.....	.....	1.80
Connecticut.				
Southington *[1]	73	26	49.3	1.15
Idaho.				
Martin †	72	18	43.9	1.42
Moscow *†[1]	82	29	48.0	1.23
Ruthburg *†[1]	89	34	40.8	0.24
Illinois.				
Winnebago †[1]	80	20	50.6	0.50
Kansas.				
Leoti †	91	24	54.5	0.00
Maine.				
Kennebec Ars'nl *[5]	70	19	48.8	0.38

Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Missouri.	°	°	°	*Ins.*
Excelsior Sp'gs *†[1]	84	29	55.1	2.32
Sarcoxie	.....	.....	.....	2.00
New Hampshire.				
Groveton *[1]	67	28	43.5	.....
New York.				
Angelica †[1]	76	24	44.2	2.51
Brentwood	77	28	51.3	1.10
Lockport	76	30	49.4	2.31
Peekskill	75	30	52.4	0.11
Watertown	72	29	47.6	2.28
Wedgwood [1]	78	26	46.2	2.20
South Carolina.				
Green Pond †	84	36	64.8	0.74
Texas.				
Albany *†[1]	87	38	66.3	5.52
Corsicana *a* †	91[k]	36[j]	67.4[k]	6.80
Durham †	.....	.....	.....	4.67
Eastland *†[1]	88	37	66.3	4.24
Flower Bluff †	88	48	76.3	0.58
Sulphur Springs †[1]	99[d]	38[d]	67.4°	7.24
Utah.				
Scofield †	77	5	38.6	1.51
Virginia.				
Stephens City	.....	.....	.....	0.23
Washington.				
Moxee Valley †	82	25	49.8	0.49

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Stations.	Temperature. (Fahrenheit.) Max.	Min.	Mean	Precip'n.
Colorado.	°	°	°	*Ins.*
Climax *†[1]	70	30	46.8	0.00
Kirk	.....	.....	.....	0.00
Scissors	.....	.....	.....	0.00
Sheridan Lake†	.....	.....	.....	0.28
Springfield†	.....	.....	.....	0.00
Steamboat Spring†	87	19	53.8	0.00
Surface Creek†	87	40	62.7	T.
Table Rock [4]	83	28	59.2	0.00
T. S. Ranch †[6]	91	42	68.0	0.00
Wilde	.....	.....	.....	0.00
Connecticut.				
Southington *†[1]	77	36	60.2	2.43
Illinois.				
Collinsville†	88	45	67.6	1.66
Iowa.				
Bancroft †[1]	88	36	63.4	2.44
Greenfield[1]	93	33	65.0	0.82
Sac City †[1]	84	36	62.2	0.85
Kansas.				
Leoti†	96	30	66.0	0.00
Michigan.				
Berrien Springs *[1]	88	49	63.1	3.19
Missouri.				
McCune *[5]	89	44	68.9	3.07
Montana.	°	°	°	*Ins.*
Deer Lodge City†..	88	30	60.8	0.23
Martinsdale †[1]	88	33	58.0	0.75
North Carolina.				
Currituck Inlet†	.....	.....	.....	1.25
South Dakota.				
Faulkton †[1]	94	34	60.6	1.17
Texas.				
Burnet *†[2]	88	.....	73.9	0.00
Corsicana *a†[4]	97[d]	53[e]	75.0[e]	0.47
Eastland *†[1]	94	54	75.5	0.85
Flower Bluff†	88	61	78.0	3.32
Mesquite†[1]	96	53	73.3	0.62
Ochiltree†	.....	.....	.....	1.30
Washington.				
East Sound†	73	43	58.5	3.69
West Virginia.				
Danville *[3]	86	56	68.7	4.15
Tannery *[1]	86	40	62.7	.....
Wisconsin.				
Lancaster†	86	38	60.6	2.78
Mexico.				
Vera Cruz	88	72	80.5	10.65
West Indies.				
Grand Turk Island.	.....	.....	.....	3.30

*Extremes of temperature from observed readings of dry thermometer.
† Weather Bureau instruments.
‡ Appears too low.
A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:
[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. ÷ 4.
[2] Mean of 8 a. m. + 8 p. m. ÷ 2.
[3] Mean of 7 a. m. + 7 p. m. ÷ 2.
[4] Mean of 6 a. m. + 6 p. m. ÷ 2.
[5] Mean of 7 a. m. + 2 p. m. ÷ 2.
[6] Mean from readings at various hours reduced to true daily mean by special tables.
[7] Mean from hourly readings of thermograph.
The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.
An Italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of a station indicates the number of days missing from the record, for instance, "[a]" denotes 14 days missing.
A small Roman letter in figure columns indicates the number of days missing from the record; example, "[d]" four days missing, etc.
No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Corrections: Oklahoma, Kingfisher, temperature data from opening of station are unreliable. Pennsylvania, August and September, 1892, "Edinburg" should read "Edinboro." Texas, August, 1892, late report "Dallas *a*" should read "Dallas *b*."
NOTE.—The following changes have been made in names of stations: Washington, Eatonville changed to Elbe; Pennsylvania, Parkers Landing changed to Parker.

Data from Canadian stations for the month of October, 1892.

Station.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches.*	*Inches.*	
Saint Johns, N. F	29.44	29.58	.....	45.2	— 0.6	13.11	.....	n.
Sydney, C. B. I.	29.64	29.70	— .34	44.6	— 1.4	4.73	+ 0.43	sw.
Anticosti Island	.....	.....	.....	.....	.....	.....	.....	.....
Halifax, N. S	29.67	29.80	— .28	44.9	— 1.1	3.47	— 1.92	nw.
Grand Manan, N. B.	29.78	29.83	.....	46.6	.....	1.49	— 3.19	w.
Yarmouth, N. S	29.76	29.84	— .24	47.2	— 0.3	1.99	— 2.04	n.
Saint Andrews, N. B	29.76	29.81	.....	44.8	.....	1.64	— 1.71	nw.
Charlottetown, P. E. I.	29.71	29.75	.....	44.0	.....	4.45	— 0.03	nw.
Chatham, N. B	29.76	29.78	— .26	41.2	+ 0.7	1.83	— 2.06	w.
Father Point, Que	29.78	29.81	— .21	39.1	+ 0.1	1.40	— 1.22	w.
Quebec, Que	29.55	29.89	— .17	41.8	+ 0.8	1.63	— 2.02	w.
Montreal, Que	29.71	29.92	— .16	44.8	+ 1.3	1.61	— 2.00	sw.
Rockliffe, Ont.	29.42	29.94	— .12	40.2	+ 1.2	1.49	— 1.21	nw.
Kingston, Ont	29.64	29.96	— .12	46.9	+ 0.9	1.20	— 1.80	nw.
Toronto, Ont	29.62	30.00	— .10	46.2	+ 0.7	1.25	— 1.04	nw.
White River, Ont.	28.66	30.04	.....	36.9	.....	2.21	.....	n.
Port Stanley, Ont	29.38	30.02	.....	47.0	.....	1.16	— 2.12	w.
Saugeen, Ont	29.29	30.01	— .05	45.5	+ 0.5	2.45	— 1.36	s.
Parry Sound, Ont.	29.28	29.99	— .07	43.0	+ 0.5	3.88	— 0.44	n.
Port Arthur, Ont	29.29	30.00	— .02	41.5	+ 4.0	1.13	— 1.56	nw.
Winnipeg, Man.	29.15	29.99	— .01	41.2	+ 4.7	0.84	— 0.89	ne.
Minnedosa, Man.	28.14	29.97	— .01	39.0	+ 5.5	2.20	+ 0.64	nw.
Qu'Appelle, Assiniboia.	27.70	29.97	— .01	42.0	+ 5.5	0.76	— 0.26	nw.
Medicine Hat, Assiniboia	27.66	29.98	+ .02	43.7	+ 1.7	0.04	— 0.40	w.
Swift Current, Assiniboia	27.42	30.02	+ .02	42.4	+ 4.4	0.12	— 1.11	w.
Calgary, Alberta	26.43	30.00	+ .05	40.6	+ 1.6	0.66	+ 0.30	w.
Prince Albert, Saskatch'n	28.42	29.95	.....	39.2	.....	0.31	.....	ne.
Esquimalt, B. C.	.....	.....	.....	.....	.....	.....	.....	.....
Stony Mountain, Man.	.....	.....	.....	.....	.....	.....	.....	.....
Spences Bridge, B. C.	29.22	30.04	.....	49.0	.....	0.98	.....	e.
Sandy Point, N. F.	29.62	29.64	.....	43.6	.....	1.38	.....	nw.
Edmonton, Alberta	27.62	29.98	+ .05	40.6	+ 0.6	1.10	+ 0.53	nw.
Battleford, Saskatchew'n	28.18	29.93	.....	40.0	.....	0.13	.....	se.
Grindstone, Gulf St. L.	29.64	29.67	.....	42.6	.....	3.80	.....	nw.
Hamilton, Bermuda	.....	.....	.....	.....	.....	.....	.....	.....

Table of miscellaneous meteorological data for October, 1892—Weather Bureau observations.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.					Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.			
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					Highest month.	Year.	Lowest month.	Year.
New England.						51.2	— 0.1										1.65	— 2.6													
Eastport	53	20	29.76	29.82	— .19	46.0	— 0.3	67	14	51	34	31	41	20	37	74	1.49	— 3.1	10	6,778	nw.	30	nw.	1	1	16	14	7.3	50.3	1878	43.7	1888
Portland	103	21	29.78	29.88	— .16	48.0	+ 1.0	72	14	55	33	31	41	20	38	73	1.64	— 2.4	9	5,805	sw.	28	nw.	2	11	13	7	5.1	55.5	1879	43.4	1888
Manchester	247	6	29.67	29.93	.....	48.8	.....	75	14	58	27	29	39	35	37	69	1.01	.....	7	3,733	nw.	26	nw.	21	16	8	7	4.4	48.8	1892	44.0	1888
Northfield	872	6	28.99	29.94	.....	44.3	.....	72	15	53	21	12	35	37	39	83	1.52	.....	18	6,068	s.	42	n.	1	3	12	16	6.8	44.3	1892	39.0	1888
Boston	125	22	29.80	29.94	— .12	52.7	+ 1.2	78	14	60	36	25	45	23	40	67	2.31	— 2.0	7	8,273	w.	31	nw.	30	15	7	9	4.5	56.0	1879	47.4	1883
Nantucket	14	6	29.93	29.94	.....	53.0	.....	68	14	58	42	31	48	15	47	80	1.66	.....	7	8,683	nw.	36	no.	1	13	6	12	6.0	53.5	1887	49.4	1888
Woods Holl	.....	15	.....	.....	.....	52.7	— 0.9	69	1	59	40	25	46	20	.....	.....	2.08	— 1.8	6	12,710	w.	47	nw.	5	9	12	10	5.4	58.1	1879	49.2	1888
Vineyard Haven	.....	6	.....	.....	.....	54.0	.....	75	1	62	34	29	46	25	.....	.....	1.97	.....	7	.....	sw.	....	.....	...	10	8	13	....	54.1	1890	50.4	1888
Block Island	27	13	29.94	29.97	— .14	53.5	— 0.8	73	1	58	41	25	49	18	46	78	2.12	— 2.2	6	11,788	nw.	42	no.	1	15	12	4	4.4	57.4	1882	49.7	1888
Narragansett Pier	.....	11	.....	.....	.....	51.8	— 0.5	76	14	61	30	25	42	26	.....	.....	1.61	— 3.0	7	.....	sw.	....	.....	...	17	10	4	....	56.3	1882	47.8	1888
New Haven	107	20	29.84	29.90	— .12	52.4	+ 0.1	79	14	62	32	25	43	31	43	75	0.94	— 3.1	6	5,603	nw.	29	w.	29	13	10	8	4.6	58.7	1879	47.6	1888
New London	47	22	29.90	29.95	— .13	52.2	— 0.8	78	14	60	33	25	44	27	42	73	0.98	— 3.5	6	5,162	w.	28	s.	29	15	11	5	4.0	58.4	1879	49.3	1888
Mid. Atlantic States.						56.1	— 1.6										0.43	— 3.0													
Albany	85	19	29.88	29.97	— .10	51.0	— 0.3	74	14	59	35	31	43	28	42	78	0.60	— 2.9	11	4,985	s.	27	se.	29	4	17	10	5.8	56.4	1882	45.6	1888
New York, N. Y	185	22	29.81	30.01	— .08	55.4	— 0.6	79	14	63	39	31	48	26	42	66	0.63	— 2.8	7	7,810	sw.	34	sw.	29	10	18	3	4.5	59.8	1879	49.7	1876
Harrisburg	377	5	29.64	30.06	.....	53.7	.....	77	14	62	36	31	45	35	43	73	0.15	.....	4	4,314	w.	36	w.	29	14	14	3	3.4	58.8	1888	50.2	1889
Philadelphia	117	22	29.91	30.04	— .07	56.4	— 0.6	79	1	65	36	6	48	29	42	66	0.30	— 2.6	3	7,235	nw.	31	n.	5	16	14	1	3.6	61.4	1879	50.4	1870
Atlantic City	53	19	29.98	30.03	— .06	55.0	— 1.3	80	1	63	33	25	47	28	45	75	0.30	— 3.0	3	8,480	w.	40	nw.	5	12	17	2	3.9	61.2	1881	50.8	1876
New Brunswick	.....	....	.....	.....	.....	53.2	.....	77	1	64	28	31	42	35	.....	.....	0.55	.....	4	.....	nw.	....	.....	...	10	16	5	.....	.....	.....	.....	.....
Baltimore	179	22	29.85	30.05	— .06	55.8	— 2.2	83	1	66	34	31	46	33	42	67	0.26	— 2.8	3	5,484	nw.	36	nw.	29	17	14	0	3.0	63.1	1881	51.8	1876
Washington, D. C.	112	22	29.95	30.07	— .05	55.4	— 1.9	84	1	66	30	31	44	34	42	68	0.34	— 2.9	3	4,505	nw.	34	w.	29	17	12	2	3.0	62.9	1881	50.7	1876
Cape Henry	.....	19	.....	.....	.....	60.0	— 3.0	83	1	68	37	27	52	28	.....	.....	0.89	— 2.9	4	.....	ne.	....	.....	...	23	2	6	....	67.7	1881	57.1	1870
Lynchburg	685	23	29.36	30.11	— .09	56.9	— 1.4	83	1	69	29	31	45	37	44	72	0.04	— 3.3	1	2,941	nw.	24	w.	29	19	11	1	3.1	65.2	1881	53.6	*
Norfolk	57	22	30.02	30.09	— .03	59.2	— 2.8	84	1	68	37	*	50	29	49	76	0.52	— 3.4	3	5,975	n.	32	nw.	30	21	6	4	2.8	60.8	1881	56.2	1876
S. Atlantic States.						63.8	— 2.1										1.09	— 3.2													
Charlotte	773	13	29.28	30.11	— .00	60.2	— 0.8	83	1	71	34	26	50	30	44	65	0.23	— 3.6	3	4,606	ne.	24	nw.	4	19	8	4	3.0	66.4	1884	56.8	1891
Hatteras	11	12	30.07	30.08	— .01	62.9	— 2.4	77	*	68	46	26	58	24	55	76	2.74	— 3.7	7	10,136	n.	44	w.	4	20	7	4	3.0	70.6	1881	61.0	1889
Kittyhawk	9	17	30.05	30.06	— .00	60.6	— 3.8	80	16	67	41	26	54	22	52	76	0.78	— 3.3	8	10,939	ne.	40	n.	25	16	13	2	4.2	68.3	1881	58.7	1870
Raleigh	388	6	29.69	30.11	.....	59.0	.....	85	1	70	33	31	48	35	46	67	0.53	.....	5	4,125	n.	19	nw.	8	17	7	7	4.1	60.3	1890	55.8	1888
Southport	31	17	30.05	30.06	— .02	62.2	— 2.7	82	5	70	36	26	54	25	55	78	0.96	— 4.0	7	5,999	ne.	34	w.	29	17	9	5	3.3	69.2	1881	60.4	1891
Wilmington	78	22	30.01	30.10	.00	62.6	— 2.1	83	*	71	38	26	54	28	53	78	0.57	— 3.4	5	5,990	ne.	26	w.	29	21	4	6	3.2	69.8	1881	59.0	1876
Charleston	52	22	30.05	30.10	.00	66.3	— 1.4	84	8	74	41	26	59	22	57	80	0.75	— 3.6	5	5,896	ne.	27	ne.	2	16	11	4	3.7	72.0	1881	62.0	1876
Columbia	.....	6	.....	.....	.....	65.7	.....	84	*	74	34	26	57	26	.....	.....	0.27	.....	3	.....	sw.	....	.....	...	26	2	3	....	65.7	1892	59.7	1891
Augusta	209	21	29.91	30.14	+ .02	63.9	— 1.8	85	16	74	33	31	53	36	53	77	0.27	— 2.4	5	3,084	ne.	40	nw.	8	22	6	3	2.4	70.6	*	59.4	1875
Savannah	98	22	30.00	30.11	.00	66.1	— 1.6	85	8	76	40	26	57	28	57	82	1.12	— 2.7	4	5,443	ne.	26	ne.	13	13	14	4	3.9	72.4	1881	62.1	1870
Jacksonville	43	22	30.03	30.08	+ .01	69.2	— 2.3	88	5	78	42	28	61	29	61	83	3.34	— 2.3	10	5,127	ne.	24	ne.	2	6	14	11	5.5	74.7	1881	65.7	1870
Florida Peninsula.																															
Jupiter	28	5	29.98	30.01	.....	74.8	.....	86	24	80	52	29	69	22	70	83	14.00	.....	17	7,760	e.	30	ne.	10	10	16	5	4.8	76.8	1888	73.6	1891
Key West	22	22	29.98	30.00	+ .01	77.5	— 1.5	87	11	82	59	29	74	13	70	79	3.67	— 1.6	18	8,866	e.	36	n.	26	5	13	13	6.3	80.3	*	70.0	1891
Micco	.....	....	.....	.....	.....	73.8	.....	87	*	80	46	29	67	22	.....	.....	9.44	.....	...	.....	e.	....	.....	...	3	6	10	.....	.....	.....	.....	.....
Tampa	36	....	30.01	30.05	.....	72.5	.....	88	6	81	45	29	64	25	64	79	1.34	.....	9	4,921	e.	19	nw.	25	10	16	5	4.8	.....	.....	.....	.....
Titusville	44	6	30.01	30.05	.....	71.9	.....	84	8	78	44	29	66	27	65	81	6.75	.....	14	8,747	ne.	48	ne.	3	17	8	6	3.7	74.8	1887	69.4	1889
Eastern Gulf States.						67.4	+ 0.4										1.23	— 1.9													
Atlanta	1,131	15	28.93	30.13	— .01	62.6	+ 0.6	82	1	72	35	26	53	25	48	65	0.59	— 2.2	3	6,282	nw.	24	w.	4	19	9	3	3.3	67.8	1884	56.5	1885
Pensacola	56	13	30.00	30.06	— .02	69.6	— 0.1	84	*	77	42	28	62	22	60	77	1.28	— 2.5	5	6,833	e.	45	e.	23	19	10	2	3.1	73.8	1884	64.7	1885
Auburn	.....	12	.....	.....	.....	64.8	+ 1.1	83	*	75	34	28	55	28	.....	.....	0.52	.....	...	.....	e.	....	.....	...	13	14	4	....	69.3	*	58.2	1891
Mobile	57	22	29.99	30.06	— .02	69.1	+ 0.4	89	8	78	40	28	60	28	59	78	3.03	— 0.3	5	4,978	n.	42	w.	8	8	21	2	4.1	73.5	1881	62.7	1875
Montgomery	257	21	29.81	30.08	— .02	66.6	— 0.4	86	*	78	37	28	56	34	53	71	0.45	— 2.2	2	4,054	no.	22	nw.	25	19	7	5	3.5	71.5	1884	60.4	1875
Meridian	358	....	29.70	30.09	.....	64.3	.....	86	*	78	31	28	51	38	52	74	0.46	.....	1	3,595	no.	24	se.	31	22	8	1	2.6	.....	.....	.....	.....
Vicksburg	234	22	29.79	30.06	— .05	68.1	+ 1.1	86	3	78	36	26	58	29	56	74	0.18	— 2.8	3	4,995	se.	22	nw.	25	18	8	5	3.7	71.3	1883	60.5	1875
University	.....	6	.....	.....	.....	65.2	.....	88	*	78	30	26	53	36	.....	.....	0.07	.....	1	.....	se.	....	.....	...	23	6	2	....	65.2	1892	60.3	1887
New Orleans	54	22	29.99	30.05	— .01	71.0	+ 0.3	87	8	78	48	27	64	21	61	77	2.14	— 1.3	6	7,155	ne.	50	ne.	22	22	4	5	2.9	75.4	1883	65.7	1885
Port Eads	.....	....	30.00	.....	.....	73.6	.....	84	*	78	53	28	69	22	66	79	3.21	.....	10	.....	e.	....	.....	...	5	23	3	5.5	.....	.....	.....	.....
Western Gulf States.						65.4	+ 1.5										3.17	— 0.2													
Shreveport	249	22	29.79	30.05	— .04	67.6	+ 0.6	90	7	78	39	26	58	33	57	77	1.54	— 2.0	4	4,690	se.	24	se.	14	13	12	6	4.2	70.9	1883	60.9	1885
Fort Smith	492	11	29.57	30.09	+ .01	63.6	+ 0.9	91	7	75	33	27	52	43	50	71	5.73	+ 2.3	10	4,635	e.	22	se.	12	18	7	6	3.6	65.4	1882	57.2	1885
Little Rock	309	14	29.76	30.09	— .01	64.2	+ 0.5	85	3	74	38	26	55	32	53	76	2.82	+ 0.2	8	3,644	ne.	19	se.	12	16	8	7	4.0	67.8	1881	58.8	1888
Corpus Christi	20	6	30.00	30.02	.....	74.7	.....	90	8	80	45	25	69	23	66	75	1.23	.....	6	9,050	se.	29	e.	14	9	16	6	4.6	74.7	1892	70.0	1887
Galveston	42	22	30.01	30.05	— .02	74.2	+ 1.7	89	8	78	53	25	70	18	65	77	1.69	— 3.3	9	8,572	se.	35	nw.	24	21	7	3	3.0	77.0	1881	69.4	1887
Palestine	511	11	29.50	30.04	— .05	69.2	+ 2.5	89	7	79	40	26	59	35	56	71	5.74	+ 1.9	9	4,142	n.	25	n.	3	8	11	12	5.8	69.7	1883	62.1	1885
San Antonio	679	14	29.34	30.06	— .01	71.0	+ 2.7	90	12	82	41	26	62	34	56	65	1.48	— 0.5	9	4,892	se.	31	ne.	2	13	12	6	4.6	72.7	1881	65.1	1880
Ohio Val. & Tenn.						58.2	0.0										0.49	— 2.8													
Chattanooga	783	14	29.31	30.14	+ .01	61.4	— 0.3	85	2	72	31	28	50	36	50	76	0.20	— 3.1	3	2,929	nw.	17	sw.	29	12	14	5	4.3	66.2	1884	55.7	1885
Knoxville	980	22	29.10	30.14	.00	59.2	— 0.5	84	2	70	30	28	48	36	45	68	0.47	— 2.7	4	3,066	no.	24	w.	29	21	6	4	2.9	64.7	1884	51.9	1875
Memphis	330	22	29.76	30.11	.00	64.4	+ 1.4	86	17	75	35	26	54	32	49	66	0.62	— 2.6	3	4,779	n.	23	se.	13	23	4	4	2.5	68.3	1881	55.7	1873
Nashville	553	22	29.52	30.11	+ .01	61.2	+ 0.5	85	17	72	31	28	50	38	46	65	0.25	— 2.5	4	2,991	nw.	21	nw.	29	14	9	8	4.4	66.5	*	55.7	1885
Lexington	.....	8	29.03	.....	.....	57.1	— 0.1	82	1	66	32	28	48	31	41	62	0.45	— 2.2	6	7,579	s.	36	nw.	29	14	11	6	4.7	....	.....	51.0	1888
Louisville	551	22	29.51	30.11	.00	58.8	— 0.5	85	1	70	32	30	48	34	42	59	0.86	— 2.2	6	3,439	n.	25	sw.	7	13	11	7	4.6	64.4	1879	53.2	1876
Indianapolis	766	22	29.28	30.11	+ .01	56.4	+ 2.4	85	3	67	28	30	46	30	41	64	0.28	— 2.8	8	4,034	nw.	23	nw.	28	14	9	8	4.4	62.3	1879	49.8	1873
Cincinnati	628	22	29.44	30.11	+ .01	55.8	— 1.2	84	3	66	31	30	46	31	42	65	0.40	— 2.3	4	4,696	nw.	27	nw.	29	11	10	10	5.2	64.2	1879	52.0	1888
Columbus	837	15	29.20	30.11	+ .02	53.6	— 0.4	83	1	64	30	30	43	33	39	66	0.84	— 2.1	7	4,736	nw.	34	s.	7	10	13	8	5.1	61.9	1879	48.7	1888
Pittsburg	820	22	29.20	30.09	.00	54.0	— 1.3	78	18	64	33	6	45	32	40	64	0.51	— 2.1	7	4,792	nw.	36	nw.	29	9	10	12	5.6	60.1	1881	48.6	1876
Parkersburg	638	5	29.44	30.13	.....	53.0	.....	82	*	64	28	6	42	40	43	78	0.74	.....	8	3,608	se.	34	nw.	29	14	10	7	4.1	54.6	1890	49.0	1888
Lower Lake Region.						51.8	0.0										1.18	— 2.1													
Buffalo	990	22	29.26	30.01	— .04	50.3	0.0	71	15	57	34	5	44	24	41	70	2.10	— 1.8	15	8,357	nw.	42	sw.	29	5	14	12	6.2	58.3	1879	45.1	1888
Oswego	335	22	29.61	29.98	— .08	49.4	+ 0.1	71	3	55	36	10	44	30	40	72	2.00	— 1.4	10	8,105	s.	34	n.	1	8	5	18	6.6	57.1	1879	43.9	1889
Rochester	523	22	29.44	30.01	— .05	50.3	+ 0.8	74	3	58	33	25	43	30	40	75	0.78	— 2.4	12	6,183	sw.	28	sw.	3	9	8	14	5.9	57.6	1879	43.9	1889
Erie	714	20	29.26	30.03	— .03	52.2	— 0.1	75	18	59	38	31	46	27	40	68	1.96	— 2.4	13	8,571	sw.	47	sw.	29	7	14	10	6.0	59.6	1879	46.2	1889
Cleveland	740	22	29.26	30.00	— .02	52.5	— 0.2	79	3	60	36	31	45	32	44	75	1.08	— 1.9	11	10,447	nw.	60	nw.	29	8	11	12	5.7	59.0	1879	47.4	1876
Sandusky	639	16	29.40	30.08	.00	53.6	+ 0.3	81	*	62	32	30	46	32	40	66	0.93	— 2.0	5	6,991	sw.	44	nw.	29	9	11	11	5.2	59.8	1879	47.9	1888
Toledo	674	22	29.35	30.08	+ .02	52.3	0.0	81	3	61	30	30	43	30	43	80	0.32	— 2.3	7	7,074	w.	42	nw.	29	13	12	6	4.7	60.6	1879	47.6	1888
Detroit	714	22	29.27	30.05	— .01	51.5	— 0.8	77	18	59	30	30	44	27	41	72	0.30	— 2.3	6	8,957	sw.	56	sw.	28	10	13	8	4.9	58.5	1879	46.1	1876
Upper Lake Region.						49.9	+ 2.8										1.85	— 1.4													
Alpena	609	21	29.35	30.02	— .01	46.8	+ 1.5	75	15	55	29	6	39	35	40	84	1.70	— 2.4	10	6,589	nw.	40	se.	28	12	11	8	5.1	53.2	1879	40.4	1876
Cheboygan	591	....	29.30	30.00	.....	45.8	.....	70	13	52	31	6	39	29	39	80	1.33	.....	9	6,012	s.	48	nw.	29	8	10	13	5.5	.....	.....	.....	.....
Escanaba	.....	22	.....	.....	.....	47.6	+ 2.6	66	15	56	25	30	40	26	.....	.....	3.36	— 0.4	7	.....	s.	....	.....	...	7	12	12	....	51.9	1879	39.2	1875
Grand Haven	628	22	29.37	30.05	+ .02	51.7	+ 2.4	76	14	59	28	30	44	29	42	75	1.14	— 2.5	9	7,323	nw.	52	w.	28	8	13	10	5.5	57.6	1879	44.2	1889
Manistee	615	5	29.36	30.04	.....	49.0	.....	76	14	56	30	30	42	30	44	85	2.07	.....	12	6,568	nw.	48	w.	28	7	12	12	5.5	49.0	1892	42.1	1889
Marquette	734	22	29.19	29.98	— .02	48.3	+ 3.3	78	14	54	30	30	42	29	40	80	3.97	+ 0.6	10	8,730	nw.	46	n.	28	4	12	15	6.7	56.1	1879	40.4	1887
Port Huron	639	19	29.37	30.07	+ .02	49.6	+ 0.3	76	14	58	29	*	41	30	40	76	1.26	— 1.7	9	8,957	nw.	50	nw.	29	9	12	10	5.6	56.6	1879	44.2	1876
Sault Ste. Marie	642	5	29.29	29.99	.....	44.4	.....	70	14	52	30	*	37	29	38	85	2.98	.....	14	5,931	nw.	40	nw.	29	2	9	20	7.3	45.6	1890	39.0	1889
Chicago	824	22	29.18	30.07	+ .02	53.6	+ 1.4	80	3	61	32	30	46	28	41	66	1.54	— 1.9	6	12,622	sw.	58	nw.	28	12	12	7	4.3	59.9	1879	47.3	1887
Milwaukee	673	22	29.32	30.05	+ .01	52.2	+ 2.4	74	3	59	29	30	45	27	40	71	1.66	— 0.9	5	7,673	nw.	50	nw.	28	12	14	5	4.6	55.8	1882	44.4	*
Green Bay	617	7	29.38	30.06	.00	50.2	+ 3.8	78	14	58	24	30	42	28	39	72	1.62	— 1.2	8	6,439	s.	48	nw.	28	6	14	11	6.3	51.6	1886	43.1	1887
Duluth	655	22	29.39	30.01	+ .01	49.0	+ 4.5	78	2	56	29	23	42	30	37	69	0.38	— 2.4	4	6,109	n.	34	n.	28	19	4	8	4.3	51.0	1879	41.0	1887
Extreme Northwest.						47.9	+ 5.4										0.40	— 1.2													
Moorhead	935	12	28.99	30.02	+ .02	47.6	+ 5.1	80	2	60	16	25	36	44	36	75	0.30	— 1.9	5	7,866	n.	42	se.	17	14	11	6	3.9	48.4	1886	38.4	1887
Saint Vincent	804	13	29.12	29.99	— .01	46.0	+ 6.0	80	3	59	15	23	33	51	36	83	0.28	— 1.6	3	7,441	n.	50	s.	17	16	7	8	4.3	46.0	1892	35.0	1887
Bismarck	1,698	19	28.19	30.01	+ .01	49.2	+ 5.2	86	5	61	17	29	37	46	35	70	0.86	— 0.3	4	6,569	nw.	44	nw.	17	19	7	5	3.9	49.2	1892	40.2	1878

Table of miscellaneous meteorological data for October, 1892—Weather Bureau observations—Continued.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.					Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.				
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date					Highest for month.	Year.	Lowest for month.	Year.
Ex. Northwest—Con.																															
Fort Buford	1,899	14	27.98	30.01	.00	48.7	+ 5.2	85	5	63	19	22	35	45	32	65	0.15	— 0.8	4	5,841	w.	34	w.	28	12	7	12	5.3	48.7	1892	36.6	1881
Upper Miss. Valley.						55.9	+ 2.7										1.28	— 1.6													
Minneapolis	.....	....	.....	.....	.....	53.4	.....	84	2	65	25	25	42	32	.....	.....	0.45	.....	4	.....	s.	....	.....	...	18	4	9	....	.....	.....	.....	....
Red Wing	758	....	29.21	30.04	.....	51.2	.....	84	2	61	23	26	41	34	39	70	1.18	.....	4	5,749	e.	48	nw.	28	19	10	2	3.2	.....	.....	.....	....
Saint Paul	850	22	29.13	30.05	+ .04	51.2	+ 3.7	83	2	62	24	25	41	32	38	68	1.39	— 0.5	6	4,963	se.	44	nw.	28	15	12	4	4.0	56.9	1879	42.3	1887
La Crosse	720	20	29.29	30.07	+ .05	52.2	+ 2.7	78	2	62	25	30	42	32	40	68	2.47	+ 0.1	6	5,127	s.	44	nw.	28	9	17	5	4.7	58.5	1879	43.7	1873
Davenport	613	21	29.45	30.11	+ .04	55.6	+ 3.4	82	2	66	28	26	45	33	42	70	0.55	— 2.5	3	5,660	nw.	46	nw.	28	15	12	4	3.9	59.8	1879	47.5	1887
Des Moines	869	15	29.14	30.07	+ .01	55.2	+ 3.4	87	1	67	25	25	43	37	40	69	2.54	— 1.1	5	4,417	sw.	32	nw.	28	20	6	5	2.7	59.6	1879	48.4	1887
Dubuque	651	20	29.30	30.07	+ .02	54.6	+ 3.8	82	2	65	25	*	44	34	44	76	0.44	— 2.7	6	3,493	nw.	30	nw.	28	13	9	9	4.7	58.7	1879	46.3	1887
Keokuk	613	22	29.43	30.08	+ .01	57.2	+ 3.2	86	1	68	28	26	46	40	43	68	0.71	— 2.5	3	3,829	nw.	30	sw.	28	19	8	4	3.1	61.6	1879	49.4	*
Cairo	359	22	29.73	30.12	+ .03	60.0	+ 0.3	85	2	70	31	27	50	31	52	79	0.74	— 2.2	6	4,783	s.	24	sw.	18	17	9	5	3.4	65.2	1879	53.7	1873
Springfield, Ill.	644	14	29.40	30.09	+ .00	56.9	+ 1.9	85	3	68	27	25	46	37	42	67	1.05	— 2.4	4	5,719	s.	30	nw.	28	16	8	7	3.9	62.6	1879	50.4	1887
Hannibal	534	....	29.51	30.09	.....	57.3	.....	86	3	69	26	30	46	42	43	68	0.67	.....	3	5,420	sw.	36	nw.	28	18	9	4	3.2	.....	.....	.....	....
Saint Louis	571	22	29.48	30.09	+ .01	60.2	+ 2.2	87	3	69	32	25	51	32	46	66	1.66	— 1.0	5	7,048	sw.	30	w.	28	21	5	5	3.1	62.8	1884	52.0	1873
Missouri Valley.						55.5	+ 3.4										1.94	— 0.3													
Columbia	.....	....	.....	.....	.....	57.5	.....	85	1	71	24	27	44	44	.....	.....	1.87	.....	5	4,183	se.	25	ne.	28	20	8	3	2.8	.....	.....	.....	....
Kansas City	963	5	29.06	30.08	.....	59.0	.....	87	2	69	32	25	49	34	45	67	3.48	.....	5	5,416	se.	31	nw.	28	13	13	5	4.1	59.0	1892	54.6	1888
Springfield, Mo.	1,356	7	28.65	30.08	+ .01	58.7	+ 0.5	85	3	69	30	27	49	36	46	71	3.68	+ 0.3	8	6,754	se.	30	se.	12	14	11	6	3.7	61.2	1882	54.2	1888
Leavenworth	857	22	29.18	30.10	+ .03	58.4	+ 2.4	86	5	69	32	26	48	39	43	68	2.80	— 0.4	5	5,484	nw.	36	nw.	17	13	11	7	4.9	62.0	1879	50.6	1873
Topeka	.....	6	.....	.....	.....	59.3	.....	86	*	70	30	25	48	39	.....	.....	1.46	.....	7	.....	n.	....	.....	...	16	8	7	....	59.3	1892	49.1	1888
Omaha	1,113	22	28.89	30.08	.00	57.4	+ 4.6	87	2	68	28	29	47	36	41	64	1.28	— 1.3	5	4,688	s.	30	nw.	28	19	8	4	3.0	61.5	1879	48.4	1873
Crete	.....	6	.....	.....	.....	56.3	.....	90	1	70	23	29	43	46	.....	.....	1.13	.....	4	.....	s.	....	.....	...	18	7	6	....	56.3	1892	50.4	*
Valentine	2,613	8	27.32	30.06	+ .01	51.9	+ 2.6	90	1	66	20	29	38	43	37	69	0.90	— 0.4	3	6,523	w.	40	nw.	17	18	9	4	4.1	52.0	1886	44.6	1887
Sioux City	1,165	....	28.79	30.04	.....	55.4	.....	90	1	69	18	24	42	46	38	62	1.32	.....	4	6,799	nw.	37	se.	11	20	6	5	2.9	.....	.....	.....	....
Pierre	1,470	....	28.44	30.01	.....	54.1	.....	98	1	68	21	29	40	46	38	66	0.56	.....	3	5,523	e.	34	nw.	17	21	7	3	2.9	.....	.....	.....	....
Huron	1,310	12	28.62	30.03	.00	51.6	+ 5.1	94	1	66	18	29	37	53	36	67	2.36	+ 1.0	3	8,822	se.	52	se.	17	17	9	5	3.5	51.6	1892	42.2	1887
Yankton	1,232	20	28.73	30.05	+ .02	55.2	+ 5.0	89	1	69	20	25	41	47	36	61	0.62	— 0.8	4	5,833	nw.	40	s.	13	18	8	5	3.2	58.9	1879	45.2	1876
Northern Slope.						48.8	+ 2.2										1.08	+ 0.3													
Havre ‡	2,477	13	27.38	30.01	— .01	47.8	+ 4.3	84	4	63	14	29	32	50	30	63	0.25	— 0.3	3	5,845	sw.	28	sw.	10	16	11	4	3.4	49.0	1889	30.2	1881
Miles City	2,374	....	27.51	30.01	.....	51.1	.....	85	4	65	22	30	38	43	36	67	0.98	.....	6	3,932	s.	27	w.	18	17	7	7	3.5	.....	.....	.....	....
Helena	4,118	13	25.86	30.10	+ .04	47.2	+ 2.2	78	4	58	26	29	36	34	29	57	0.26	— 0.6	5	5,774	sw.	34	sw.	11	16	6	9	4.5	50.7	1889	37.9	1881
Rapid City	3,280	7	26.66	30.04	.00	51.7	+ 3.1	96	1	63	24	31	40	45	34	61	2.29	+ 1.7	5	6,941	w.	35	nw.	12	22	6	3	2.8	51.7	1892	44.4	1888
Cheyenne	6,105	22	24.07	30.11	+ .04	45.2	— 0.8	83	1	57	22	31	34	38	26	55	1.12	+ 0.4	4	5,932	nw.	38	s.	16	14	13	4	3.5	48.3	1875	39.3	1883
Lander	5,377	....	24.69	30.13	.....	44.2	.....	76	4	60	17	20	28	45	26	59	1.03	.....	5	2,598	sw.	30	s.	15	21	5	5	3.0	.....	.....	.....	....
Kearney	2,173	....	27.75	30.03	.....	54.6	.....	88	1	66	28	29	43	42	37	60	1.71	.....	4	8,850	se.	46	sw.	13	17	7	7	4.0	.....	.....	.....	....
North Platte	2,841	19	27.12	30.09	+ .02	52.2	+ 2.0	88	1	67	23	29	38	45	36	66	1.49	+ 0.4	5	6,429	w.	38	s.	16	16	9	6	3.7	55.2	1879	44.5	1877
Middle Slope.						54.7	+ 0.9										1.83	+ 0.6													
Denver	5,287	21	24.80	30.11	+ .05	50.2	— 0.5	90	1	63	29	26	38	36	29	53	3.92	+ 3.1	4	5,482	s.	48	nw.	12	17	9	5	3.7	55.5	1884	45.7	1873
Pikes Peak	.....	15	17.82	.....	.....	19.8	.....	47	1	26	—16	18	14	35	10	65	0.08	.....	8	15,748	sw.	88	sw.	16	12	10	9	4.9	39.2	1879	16.4	1883
Pueblo	4,734	5	25.30	30.06	.....	52.0	.....	83	1	66	28	31	38	43	30	51	1.96	.....	6	4,936	nw.	64	nw.	12	15	8	8	4.0	53.2	1889	50.6	1890
Concordia	1,410	8	28.58	30.08	+ .02	57.7	+ 2.9	89	1	70	28	29	45	47	44	71	0.83	— 0.8	6	5,050	s.	36	se.	12	21	2	8	3.3	59.7	1886	50.9	1885
Dodge City	2,523	19	27.44	30.07	+ .02	56.2	+ 0.4	88	6	69	30	25	43	42	38	63	0.73	— 0.5	3	7,750	se.	50	se.	16	19	10	2	3.0	59.6	1884	50.8	1883
Wichita	1,366	5	28.62	30.07	.....	59.6	.....	89	3	70	33	29	49	38	44	65	2.52	.....	7	5,795	s.	46	n.	17	16	6	9	4.4	59.6	1892	50.4	1889
Oklahoma City	1,239	....	28.77	30.08	.....	62.0	.....	88	3	72	34	9	52	39	50	70	4.68	.....	13	6,200	se.	32	n.	18	17	5	9	4.1	.....	.....	.....	....
Southern Slope.						57.7	— 0.8										3.90	+ 1.6													
Abilene	1,748	8	28.25	30.07	— .01	65.0	— 0.2	87	7	74	37	25	56	28	53	75	6.03	+ 3.0	8	7,190	se.	31	s.	12	14	10	7	4.4	65.2	1889	61.7	1887
Amarillo	3,691	....	26.31	30.07	.....	56.2	.....	83	6	66	32	24	47	34	40	63	2.85	.....	8	11,374	s.	72	sw.	12	17	7	7	3.5	.....	.....	.....	....
Fort Stanton	6,152	9	24.01	30.00	+ .01	50.4	— 1.5	77	6	63	27	27	38	49	27	51	1.76	+ 0.2	8	3,488	se.	42	sw.	17	10	10	11	5.1	53.4	1884	48.5	1887
Southern Plateau.						62.1	— 1.5										0.52	— 0.1													
El Paso	3,796	15	26.23	30.05	.00	62.6	— 1.1	87	15	75	37	24	50	42	31	40	0.22	— 0.9	4	5,416	e.	38	ne.	21	22	8	1	2.2	67.8	1878	59.8	1882
Santa Fe	7,059	19	23.31	30.07	+ .03	48.8	— 0.9	77	1	59	24	12	39	31	27	50	1.32	+ 0.3	4	5,754	se.	45	sw.	16	19	6	6	3.7	52.8	1875	45.7	1880
Tucson	2,432	8	27.44	29.93	.....	66.9	— 1.6	94	2	82	35	18	52	46	34	36	0.27	— 0.2	1	6,560	s.	40	se.	28	23	5	3	2.4	71.9	1878	64.6	1882
Yuma	141	18	29.76	29.90	— .01	72.2	— 0.3	100	4	87	42	19	58	40	42	41	0.00	— 0.3	0	4,298	n.	32	n.	12	24	7	0	1.5	77.0	1876	66.7	1883
Keeler	3,632	8	26.30	29.98	.00	59.8	— 2.4	83	4	70	35	17	50	28	30	37	0.81	+ 0.6	4	5,795	e.	38	n.	19	16	4	11	4.0	65.2	1888	58.2	1886
Middle Plateau.						49.4	0.0										0.80	— 0.8													
Carson City	4,720	5	25.33	30.09	.....	48.4	.....	80	4	63	23	19	34	41	26	45	0.25	.....	4	.....	.....	....	.....	...	20	7	4	3.0	52.4	1888	48.2	1890
Winnemucca	4,340	14	25.71	30.10	+ .03	47.5	+ 0.5	82	4	63	15	17	32	44	19	37	0.30	— 0.2	6	6,855	sw.	42	nw.	31	13	14	4	3.9	53.0	1885	42.5	1881
Salt Lake City	4,345	19	25.70	30.11	+ .02	51.8	+ 0.6	80	6	62	30	17	42	32	33	53	1.58	— 0.1	10	3,778	nw.	37	nw.	9	17	5	9	3.9	59.1	1875	46.1	1883
Montrose	5,795	8	24.32	30.06	+ .01	48.8	— 1.0	83	1	62	21	18	36	38	28	55	0.52	— 0.4	4	4,079	se.	45	nw.	11	15	8	8	4.6	52.2	1889	45.7	1890
Northern Plateau.						53.0	+ 2.1										0.80	— 1.0													
Baker City	3,430	....	26.52	30.06	.....	47.9	.....	83	4	62	24	19	34	43	33	64	0.39	.....	8	3,838	se.	32	sw.	9	19	3	9	3.5	.....	.....	.....	....
Idaho Falls	4,733	....	25.30	30.10	.....	47.1	.....	80	6	61	23	20	34	41	31	60	1.77	.....	6	4,937	n.	34	s.	11	13	6	12	4.7	.....	.....	.....	....
Spokane	1,930	12	28.04	30.08	+ .02	51.0	+ 3.7	86	4	64	28	19	38	37	35	63	0.69	— 1.2	6	3,105	ne.	24	se.	14	19	6	6	3.8	52.4	1889	42.9	1881
Walla Walla	1,018	7	28.98	30.07	— .01	55.1	+ 0.5	86	4	66	33	15	44	32	46	70	0.92	— 0.8	8	3,174	s.	19	sw.	10	17	10	4	4.1	57.5	1891	50.2	1886
N. Pac. Coast Region.						52.0	+ 0.3										4.27	— 1.7													
East Clallam	.....	....	.....	.....	.....	50.6	.....	71	28	57	32	16	44	35	.....	.....	5.70	.....	13	.....	sw.	....	.....	...	3	9	19	...	.....	.....	.....	....
Fort Canby	179	10	29.82	30.02	— .01	54.2	+ 1.0	73	25	59	43	16	49	23	51	90	3.81	— 1.6	13	7,900	s.	72	s.	10	11	6	14	5.9	56.3	1889	51.1	1883
Neah Bay	.....	9	.....	.....	.....	51.2	+ 0.5	65	8	58	34	16	45	20	.....	.....	7.62	— 2.6	12	.....	se.	....	.....	...	3	16	12	....	54.0	1889	49.0	1890
Olympia	44	16	30.00	30.04	— .02	51.6	+ 0.6	77	3	58	34	16	45	31	47	86	3.25	— 1.3	11	1,783	s.	15	sw.	11	5	11	15	6.6	54.0	1889	47.4	1881
Port Angeles	29	8	29.99	30.02	.00	48.2	+ 0.5	64	2	54	33	16	43	20	45	88	1.33	— 2.1	10	3,120	s.	24	w.	31	3	9	19	7.5	50.0	1891	45.0	1886
Port Crescent	.....	....	.....	.....	.....	[d]49.6	.....	[d]73	8	[d]57	[d]30	16	[d]42	[d]27	.....	.....	2.19	.....	11	.....	sw.	....	.....	...	1	12	18	....	.....	.....	.....	....
Tatoosh Island	86	10	29.91	30.01	— .02	51.2	+ 0.8	62	9	54	44	*	48	12	49	92	7.39	— 1.8	17	13,655	e.	62	e.	25	8	8	15	6.5	54.2	1889	48.1	1883
Astoria	.....	8	.....	.....	.....	54.6	— 0.2	68	2	60	41	16	49	18	.....	.....	4.30	— 0.5	13	.....	sw.	....	.....	...	10	8	13	....	57.6	1889	51.7	1886
Portland	157	21	29.89	30.07	— .01	[e]53.2	— 0.8	[e]82	2	[e]61	[e]38	28	[e]45	[e]31	49	87	2.16	— 2.1	12	4,709[b]	nw.	37	s.	9	13	8	10	5.4	58.6	1875	49.8	1873
Roseburg†	523	16	29.50	30.06	— .05	54.4	— 0.6	83	2	64	37	15	45	36	47	79	1.89	— 0.9	11	1,852	nw.	22	se.	10	15	5	11	4.8	58.1	1891	47.7	1881
Mid. Pac. Coast Reg.						61.7	+ 0.2										1.28	— 0.1													
Eureka	64	6	29.99	30.05	.....	53.6	.....	69	8	60	40	17	48	28	51	93	2.90	.....	9	3,209	n.	30	n.	18	11	5	15	5.8	56.2	1889	51.6	1890
Red Bluff	342	16	29.66	30.02	.00	63.5	+ 0.5	97	5	76	41	15	52	41	44	56	1.42	— 0.1	7	4,651	nw.	28	nw.	11	19	8	4	2.7	71.1	1887	57.5	1881
Sacramento	64	16	29.92	29.99	— .02	62.0	+ 0.3	93	4	75	40	*	49	38	47	65	0.70	— 0.4	4	4,255	s.	30	n.	11	21	8	2	2.7	66.5	1887	56.8	1881
San Francisco	109	22	29.90	30.02	.00	59.6	— 0.2	79	26	67	47	*	52	28	49	78	1.65	+ 0.3	6	4,979	w.	36	w.	10	18	5	8	3.7	62.9	1887	55.9	1881
Point Reyes Light	.....	....	.....	.....	.....	53.1	.....	68	19	58	41	14	49	17	.....	.....	1.84	.....	15	.....	nw.	....	.....	...	5	12	14	....	.....	.....	.....	....
S. Pac. Coast Region.						63.4	— 0.4										0.28	— 0.4													
Fresno	338	6	29.61	29.97	.....	63.9	.....	94	4	77	36	17	51	37	44	55	0.34	.....	2	3,781	nw.	25	nw.	16	13	13	5	3.9	68.5	1887	62.8	1889
Los Angeles	330	16	29.61	29.97	— .01	64.0	— 0.3	96	2	76	40	22	52	40	48	69	0.33	— 0.6	4	2,291	w.	16	sw.	16	12	13	6	4.4	67.8	1890	59.3	1886
San Diego	93	21	29.87	29.97	— .02	62.7	— 0.6	83	13	71	46	19	55	27	53	75	0.22	— 0.2	5	3,139	w.	18	nw.	17	12	11	8	4.9	67.2	1875	59.7	1886

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record. * Two or more directions, dates, or years. † Received too late to be considered in departures, etc. ‡ All barometer, temperature, and precipitation normals, and extremes of temperature are obtained from Fort Assinaboine records.

STATIONS OF THE WEATHER BUREAU.

Station.	Observer.
*First Order.**	
Abilene, Tex	Allen Buell.
Albany, N. Y	A. F. Sims.
Alpena, Mich	H. McP. Baldwin.
Atlanta, Ga	Park Morrill.
Augusta, Ga	David Fisher.
Bismarck, N. Dak	Wm. H. Fallon.
Boston, Mass	J. W. Smith.
Buffalo, N. Y	D. Cuthbertson.
Chicago, Ill	Dr. H. C. Frankenfield.
Cincinnati, Ohio	M. T. Blystone.
Cleveland, Ohio	W B. Stockman.
Columbus, Ohio	C. M. Strong.
Davenport, Iowa	F. J. Wals.
Denver, Colo	J. J. Gilligan.
Des Moines, Iowa	Dr. Geo. M. Chappel.
Detroit, Mich	E. A. Evans.
Dodge City, Kansas	Geo. T. Todd.
Duluth, Minn	B. H. Bronson.
Eastport, Me	D. C. Murphy.
El Paso, Tex	N. D. Lane.
Galveston, Tex	Dr. I. M. Cline.
Havre, Mont	Chas. W. Ling.
Helena, Mont	E. J. Glass.
Huron, S. Dak	E. H. Emery.
Indianapolis, Ind	J. M. Sherier.
Jacksonville, Fla	D. T. Fiannery.
Kansas City, Mo	P. Connor.
Keeler, Cal	H. E. Wilkinson.
Key West, Fla	H. B. Boyer.
Knoxville, Tenn	Henry Pennywitt.
Lynchburg, Va	J. N. Ryker.
Manistee, Mich	Louis Dorman.
Marquette, Mich	P. McDonough.
Memphis, Tenn	W. M. Wilson.
Milwaukee, Wis	Willis L. Moore.
Moorhead, Minn	S. G. Duffey.
Nantucket, Mass	B. A. Blundon.
Nashville, Tenn	J. B. Brown.
New Orleans, La	Geo. E. Hunt.
New York City	E. B. Dunn.
Norfolk, Va	A. J. Davis.
Olympia, Wash	Wm. Bell.
Omaha, Nebr	G. E. Lawton.
Philadelphia, Pa	L. M. Dey.
Pikes Peak, Colo	U. G. Myers.
Pittsburg, Pa	O. D. Stewart.
Portland, Oregon	B. S. Pague.
Rochester, N. Y	A. L. White.
Roseburg, Oregon	Thos. Gibson.
Saint Louis, Mo	D. J. Herndon.
Saint Paul, Minn	P. F. Lyons.
Salt Lake City, Utah	Geo. N. Salisbury.
San Diego, Cal	M. L. Hearne.
San Francisco, Cal	Wm. Burrows.
Santa Fe, N. Mex	H. B. Hersey.
Sault Ste. Marie, Mich	C. L. Bozzell.
Savannah, Ga	P. H. Smyth
Spokane, Wash	Chas. Stewart.
Tampa, Fla	Thomas J. Considine.
Toledo, Ohio	E. A. Hanner.
Vicksburg, Miss	Wm. E. Butler.
Washington, D. C	S. W. Beall.
Wilmington, N. C	A. B. Crane.
Yuma, Ariz	O. T. Stacy.
Second Order.†	
Amarillo, Tex	Wayland Bailey.
Atlantic City, N. J	Wm. T. Blythe.
Baker City, Oregon	C. H. Stuller.
Baltimore, Md	Dr. C. P. Cronk.
Block Island, R. I	Wm. Davis.
Buford, Fort, N. Dak	E. C. Hobbs.
Cairo, Ill	J. W. Byram.
Canby, Fort, Wash	E. H. Thompson.
Carson City, Nev	Ford A. Carpenter.
Charleston, S. C	L. N. Jesunofsky.
Charlotte, N. C	I. G. Gardiner.
Chattanooga, Tenn	L. M. Pindell.
Cheboygan, Mich	J. H. Clery.
Cheyenne, Wyo	E. M. Ravenscraft.
Concordia, Kans	L. M. Tarr.
Corpus Christi, Tex	George Reeder.
Dubuque, Iowa	S. C. Emery.
Erie, Pa	Peter Wood.
Eureka, Cal	Maurice Connell.
Fort Smith, Ark	R. Q. Grant.
Fresno, Cal	J. R. Williams.
Grand Haven, Mich	Geo. W. Felger.
Green Bay, Wis	F. W. Conrad.
Hannibal, Mo	Dr. Robert J. Hyatt.
Harrisburg, Pa	Frank Ridgway.
Hatteras, N. C	H. B. Dick.
Idaho Falls, Idaho	James H. Smith.
Jupiter, Fla	A. J. Mitchell.
Kearney, Nebr	H. H. Curley.
Keokuk, Iowa	F. Z. Gosewisch.
Kittyhawk, N. C	Walter H. Scholl.
La Crosse, Wis	W. U. Simons.
Lander, Wyo	R. M. Crawford.
Leavenworth, Kans	L. A. Welsh.
Lexington, Ky	V. E. Muncy.
Little Rock, Ark	F. H. Clarke.
Los Angeles, Cal	S. M. Blandford.
Louisville, Ky	Frank Burke.
Manchester, N. H	J. H. Melton.
Meridian, Miss	Geo. Hass Hagen.
Miles City, Mont	E. L. Douglas.
Mobile, Ala	Jas. A. Barry.
Montgomery, Ala	Arthur E. Hacket.
Montrose, Colo	P. J. Bolton.
New Haven, Conn	J. W. Bauer.
New London, Conn	R. O. Lazenby.
Northfield, Vt	Wm. Line.
North Platte, Nebr	J. C. Piercy.
Oklahoma, Okla. T	Jas. I. Widmeyer.
Oswego, N. Y	J. G. Linsley.
Palestine, Tex	M. H. Perry.
Parkersburg, W. Va	H. W. Richardson.
Pensacola, Fla	E. C. Easton.
Pierre, S. Dak	W. A. Shaw.
Point Barrow, Alaska	L. M. Stevenson.
Port Angeles, Wash	Homer Irvine.
Port Huron, Mich	Wm. M. Edmondson.
Portland, Me	E. P. Jones.
Pueblo, Colo	F. H. Brandenburg.
Raleigh, N. C	C. F. von Herrmann.
Rapid City, S. Dak	Wm. Norrington.
Red Bluff, Cal	John J. McLean.
Red Wing, Minn	F. T. Williams.
Sacramento, Cal	J. A. Barwick.
Saint Vincent, Minn	H. W. Grasse.
San Antonio, Tex	L. F. Passailaigue.
Sandusky, Ohio	B. F. Hough.
Shreveport, La	C. A. Smith.
Sioux City, Iowa	U. G. Purssell.
Southport, N. C	S. L. Dosher.
Springfield, Ill	John Craig.
Springfield, Mo	T. S. Collins.
Stanton, Fort, N. Mex	Mrs. M. H. Bailey.
Tatoosh Island, Wash	Frank R. Beahan.
Titusville, Fla	Jos. E. Lanouette.
Tucson, Ariz	Julius C. Hayden.
Valentine, Nebr	John Fitzgerald.
Walla Walla, Wash	Fitzhugh Newman.
Wichita, Kans	Dr. Fred. L. Johnson.
Winnemucca, Nev	Geo. D. Boutcher
Woods Holl, Mass	J. P. Slaughter.
Yankton, S. Dak	Geo. W. Scott.
Third Order.‡	
Astoria, Oregon	John Grover.
Auburn, Ala	Prof. P. H. Mell.
Cape Henry, Va	J. P. Sherry.
Columbia, Mo	H. A. McNally.
Columbia, S. C	A. P. Butler.
Crete, Nebr	G. A. Loveland.
Currituck Inlet, N. C	John D. Blagden.
East Clallam, Wash	R. S. Dimmick.
Escanaba, Mich	J. C. Morrell.
Ithaca, N. Y	R. M. Hardinge.
Micco, Fla	Hal. P. Hardin.
Minneapolis, Minn	John H. Harmon.
Narragansett Pier, R. I	Mrs. M. E. Conway.
Neah Bay, Wash	Charles Adie.
New Brunswick, N. J	E. W. McGann.
Point Reyes Light, Cal	T. R. Ryan.
Port Crescent, Wash	Otto B. Hart.
Pysht, Wash	(Temporarily closed.)
Topeka, Kans	T. B. Jennings.
University, Miss	Prof. R. B. Fulton.
Vineyard Haven, Mass	W. W. Neifert.
Special Cotton Region Stations.§	
Atlanta, Ga. (center).	
Columbus, Ga	J. W. Long.
Gainesville, Ga	R. T. Murphy.
Greenville, S. C	Mrs. S. A. Crittenden.
Griffin, Ga	P. H. McDowell.
Macon, Ga	W. M. Craven.
Newnan, Ga	Nora M. Avery.
Spartanburg, S. C	F. P. Robinson.
Toccoa, Ga	J. K. Dixon.
West Point, Ga	J. A. Erwin.
Augusta, Ga. (center).	
Allendale, S. C	C. B. Farmer.
Athens, Ga	W. P. Briggs.
Batesburg, S. C	D. P. Hartley.
Blackville, S. C	S. S. Turner.
Camak, Ga	J. A. Chapman.
Greenwood, S. C	W. D. Vance.
Union Point, Ga	R. F. Bryan.
Washington, Ga	Miss I. D. Smith.
Waynesboro, Ga	H. W. Blount.
Charleston, S. C. (center).	
Green Pond, S. C	E. G. Strobel.
Hardeeville, S. C	W. J. Evans.
Kingstree, S. C	T. F. Willis.
St. Georges, S. C	W. G. Sease.
St. Matthews, S. C	J. S. Wannamaker.
Galveston, Tex. (center).	
Belton, Tex	A. J. Embree.
Brenham, Tex	J. G. Sloan.
Columbia, Tex	J. S. Rogers.
Corsicana, Tex	E. L. Gibson.
Cuero, Tex	Dr. J. M. Reuss.
Dallas, Tex	H. P. Berry.
Hearne, Tex	W. A. Snell.
Houston, Tex	D. R. Saunders.
Huntsville, Tex	W. Y. Barr.
Luling, Tex	J. E. Fisher.
Longview, Tex	G. W. Krech.
Orange, Tex	J. H. Kelly.
Tyler, Tex	W. A. Hartel.
Waco, Tex	W. H. Godber.
Weatherford, Tex	B. H. Ledbetter.
Little Rock, Ark. (center).	
Brinkley, Ark	A. J. Hahn.
Forrest, Ark	J. H. Bard.
Helena, Ark	A. J. Gaschen.
Malvern, Ark	Jos. Coffen.
Newport, Ark	R. C. McMann.
Paris, Tex	C. E. Thorne.
Pine Bluff, Ark	J. E. O'Connor.
Prescott, Ark	Wm. Friganza.
Russellville, Ark	O. M. Ellsworth.
Texarkana, Ark	M. J. Nash.
Memphis, Tenn. (center).	
Arlington, Tenn	A. T. B. Etheridge.
Batesville, Miss	J. M. Cox.
Bolivar, Tenn	W. F. McCarley.
Brownsville, Tenn	W. A. Roberts.
Corinth, Miss	W. O. Henson.
Covington, Tenn	W. N. White.
Decatur, Ala	J. M. Vickray.
Dyersburg, Tenn	H. G. Wood.
Hernando, Miss	L. B. Jones.
Holly Springs, Miss	N. T. Bryant.
Milan, Tenn	O. F. Cantwell.
Tuscumbia, Ala	John Lasseter.
Mobile, Ala. (center).	
Aberdeen, Miss	O. L. McKay.
Columbus, Miss	W. B. Hopkins.
Evergreen, Ala	Mattie Lee.
Livingston, Ala	L. J. Marbry.
Macon, Miss	B. J. Allen.
Okolona, Miss	S. J. Russell.
Thomasville, Ala	J. N. Cammack.
Waynesboro, Miss	W. R. McKinley
Montgomery, Ala. (center).	
Eufaula, Ala	O. T. Moore.
Fort Deposit, Ala	W. L. Van Pelt.
Marion, Ala	Ira J. Davis.
Opelika, Ala	W. L. Carmack.
Pine Apple, Ala	J. B. Raab.
Union Springs, Ala	T. P. Wade.
New Orleans, La. (center).	
Alexandria City, La	L. C. Giffe.
Amite, La	Florence Hills.
Brookhaven, Miss	E. M. Bee.
Cheneyville, La	W. W. Wall.
Coushatta, La	L. M. Howard.
Hazlehurst, Miss	B. Fugate.
Lafayette, La	J. J. Davidson.
Minden, La	W. S. Hunter.
Natchez, Miss	C. Steitenroth.
Natchitoches, La	Sam Levy.
Port Gibson, Miss	H. H. Crisler.
Savannah, Ga. (center).	
Albany, Ga	J. S. Clark.
Alapaha, Ga	C. I. Jones.
Americus, Ga	L. A. Smith.
Bainbridge, Ga	J. E. Peacock.
Cordele, Ga	A. M. Jones.
Eastman, Ga	C. H. Peacock.
Fort Gaines, Ga	S. E. Lewis.
Gainesville, Fla	James Bell.
Millen, Ga	J. R. Sheppard.
Quitman, Ga	A. W. Thomas.
Thomasville, Ga	Robt. Thomas, Jr.
Way Cross, Ga	W. P. Whelphy.
Vicksburg, Miss. (center).	
Jackson, Miss	H. S. Wright.
Lake, Miss	Willie Wilkins.
Monroe, La	W. W. Renwick.
Rolling Fork, Miss	S. W. Langford.
Wilmington, N. C. (center).	
Cheraw, S. C	W. R. Godfrey.
Florence, S. C	P. H. Walsh.
Goldsboro, N. C	Mrs. N. B. Thomas.
Greensboro, N. C	G. W. Pritchett.
Lumberton, N. C	B. M. Davis.
Newbern, N. C	W. G. Boyd.
Weldon, N. C	T. A. Clarke.
Sugar and Rice Stations.§	
New Orleans, La. (center).	
Baton Rouge, La	H. A. Morgan.
Covington, La	W. B. Franklin.
Donaldsonville, La	W. D. Park.
Franklin, La	E. M. Cornay.
Lake Charles, La	Wm. Meyer.
Opelousas, La	E. J. Clements.
Rayne, La	I. A. Smith.
Schriever, La	John T. Moore.

* Take two observations daily, and also record continuously important meteorological phenomena, such as wind-direction and velocity, precipitation, temperature, barometric pressure, etc., by means of self-registering instruments. † Take two observations daily. ‡ Take one observation, in addition to other special duties. § Take one observation daily from April 15 to November 30 each year, and telegraph it to district centers (regular Weather Bureau stations).

Form Map G—1891.

Chart I. Tracks of area

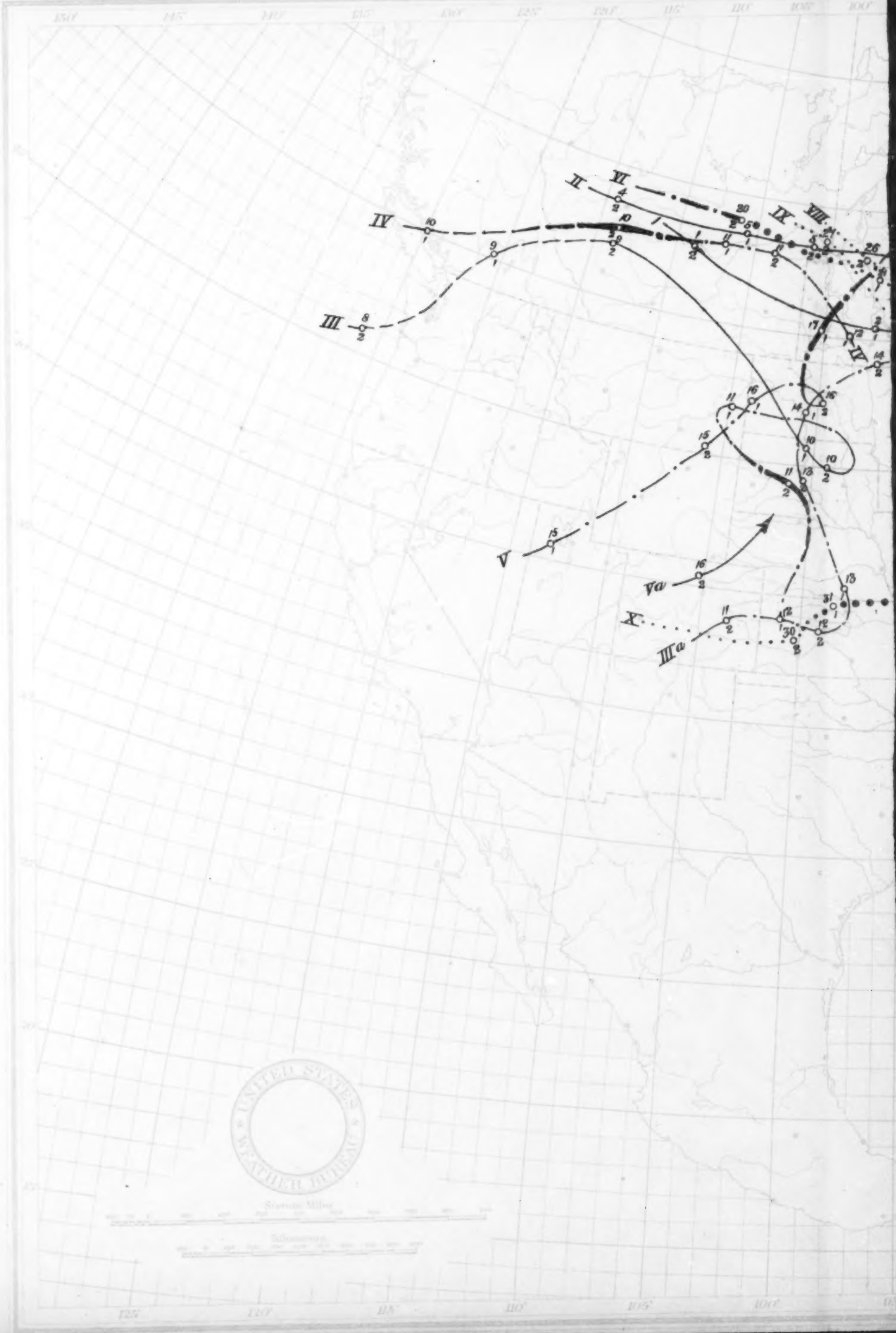
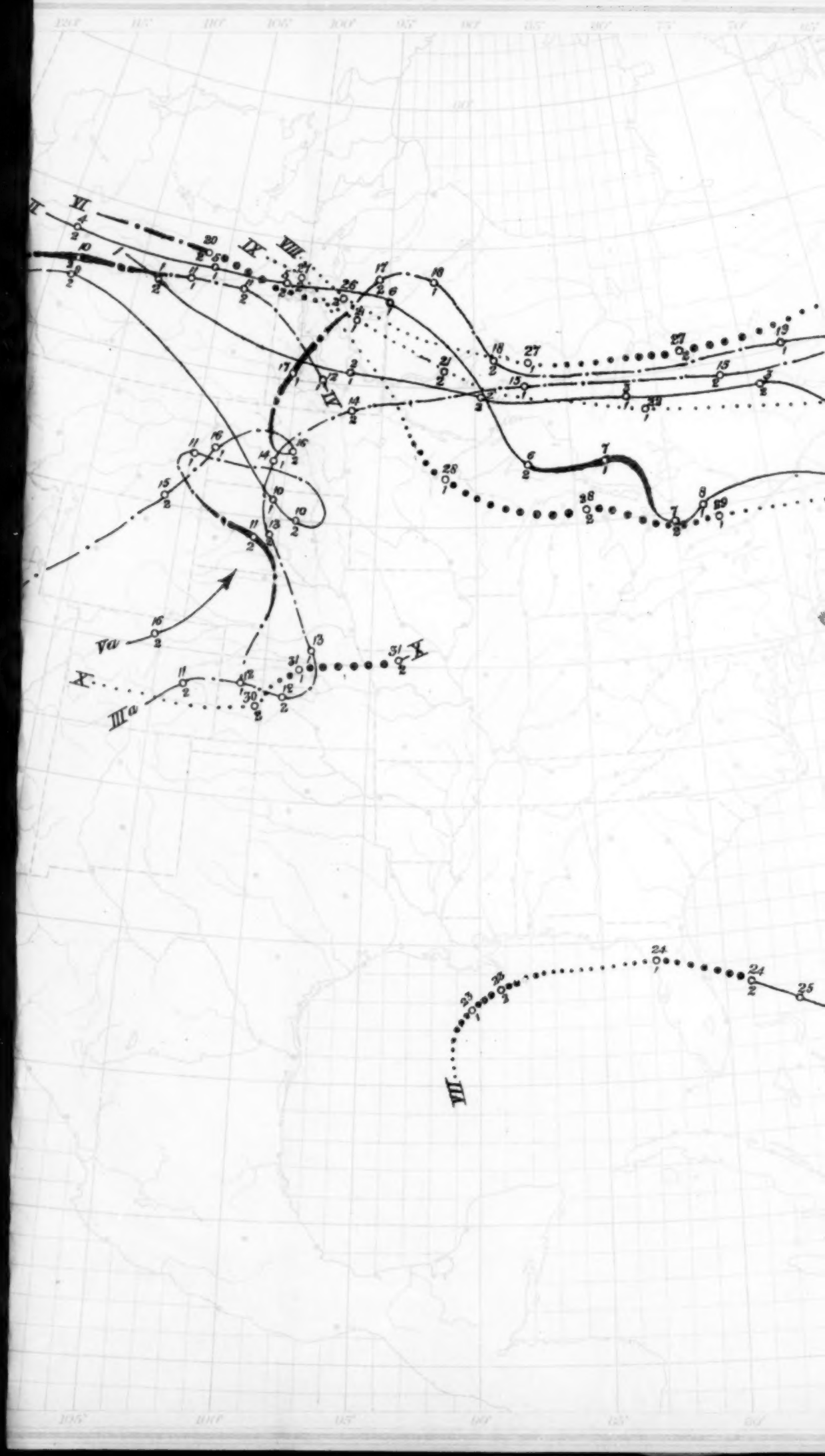
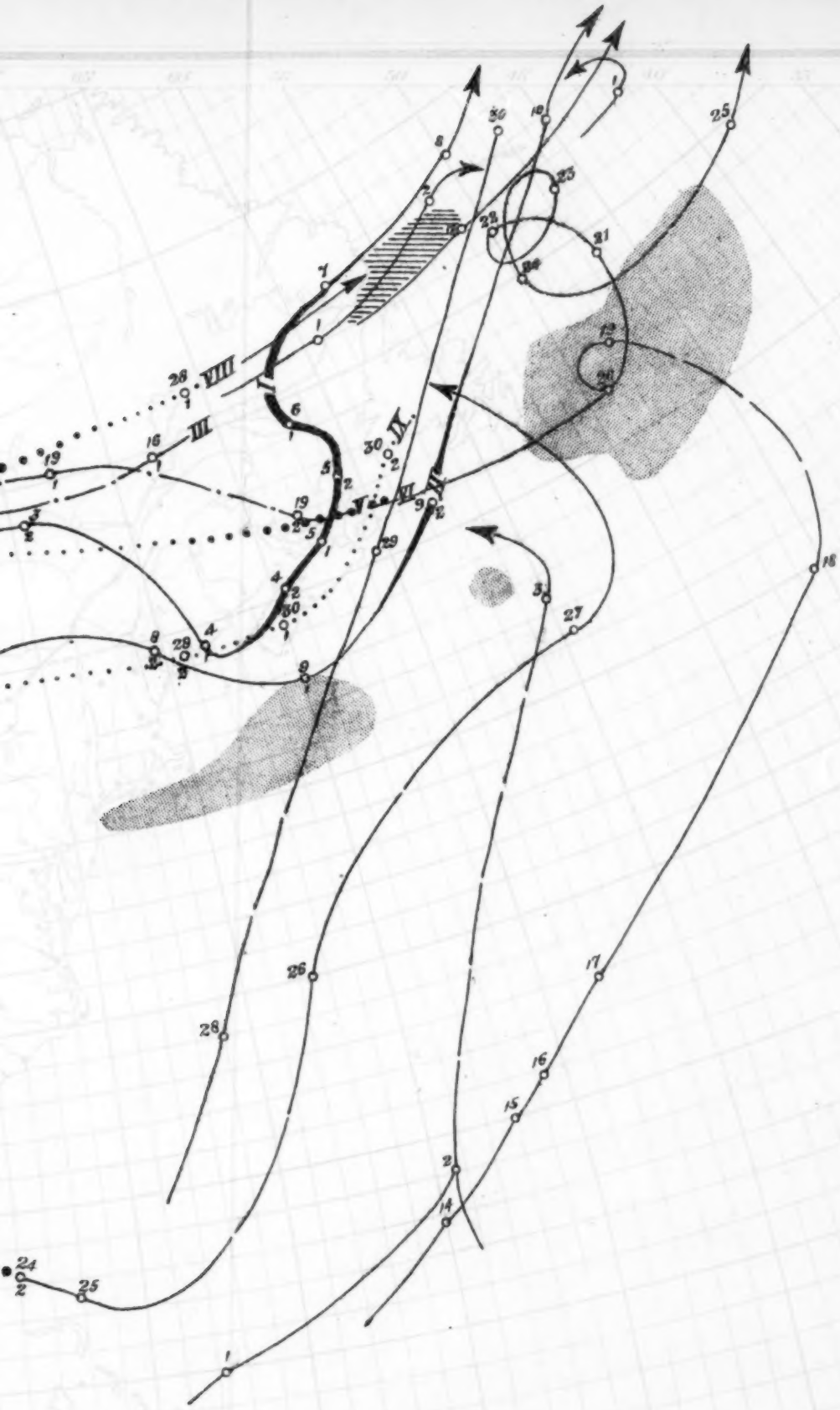


Chart I. Tracks of areas of Low Pressure. October, 1892.





NOTES.

——— Tracks of first decade of month.
– – – – Tracks of second decade of month.
..... Tracks from 21st to 31st, inclusive.

The Roman letters show number and order of areas of low pressure. The figures above the lines show the days of the month, those below (1 and 2) indicate, respectively, the 8 a. m. and 8 p. m., 75th meridian time, observations. The heavy portion of tracks indicates where the greatest storm energy was displayed.

The dotted shading ( ) indicates fog belts.

The ruled shading ( ) indicates the position in which field-ice or icebergs were observed.

Chart II. Isobars, Isotherms, and Winds. October, 1892.

Chart III. Precipitation. October, 1892.

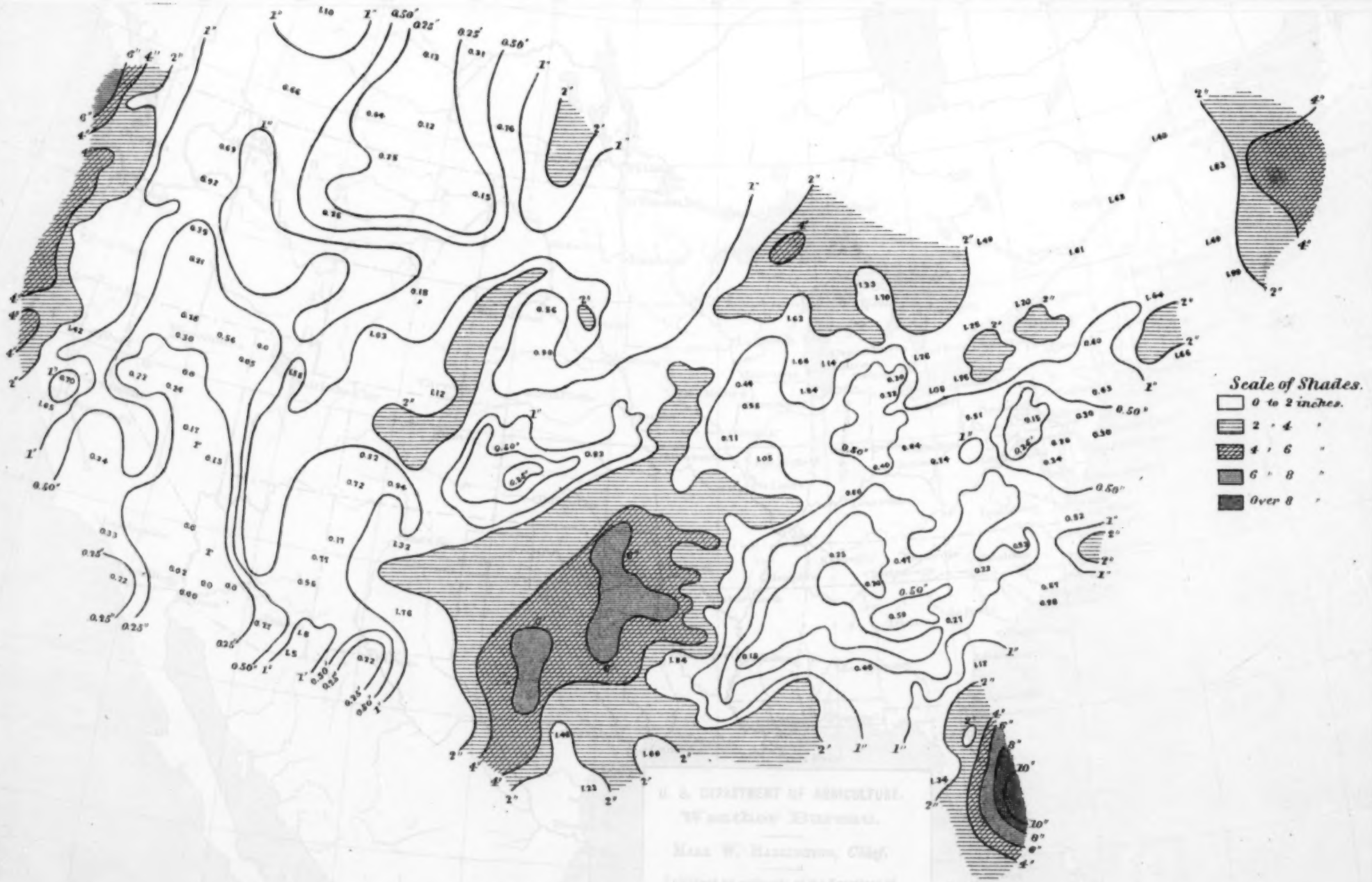
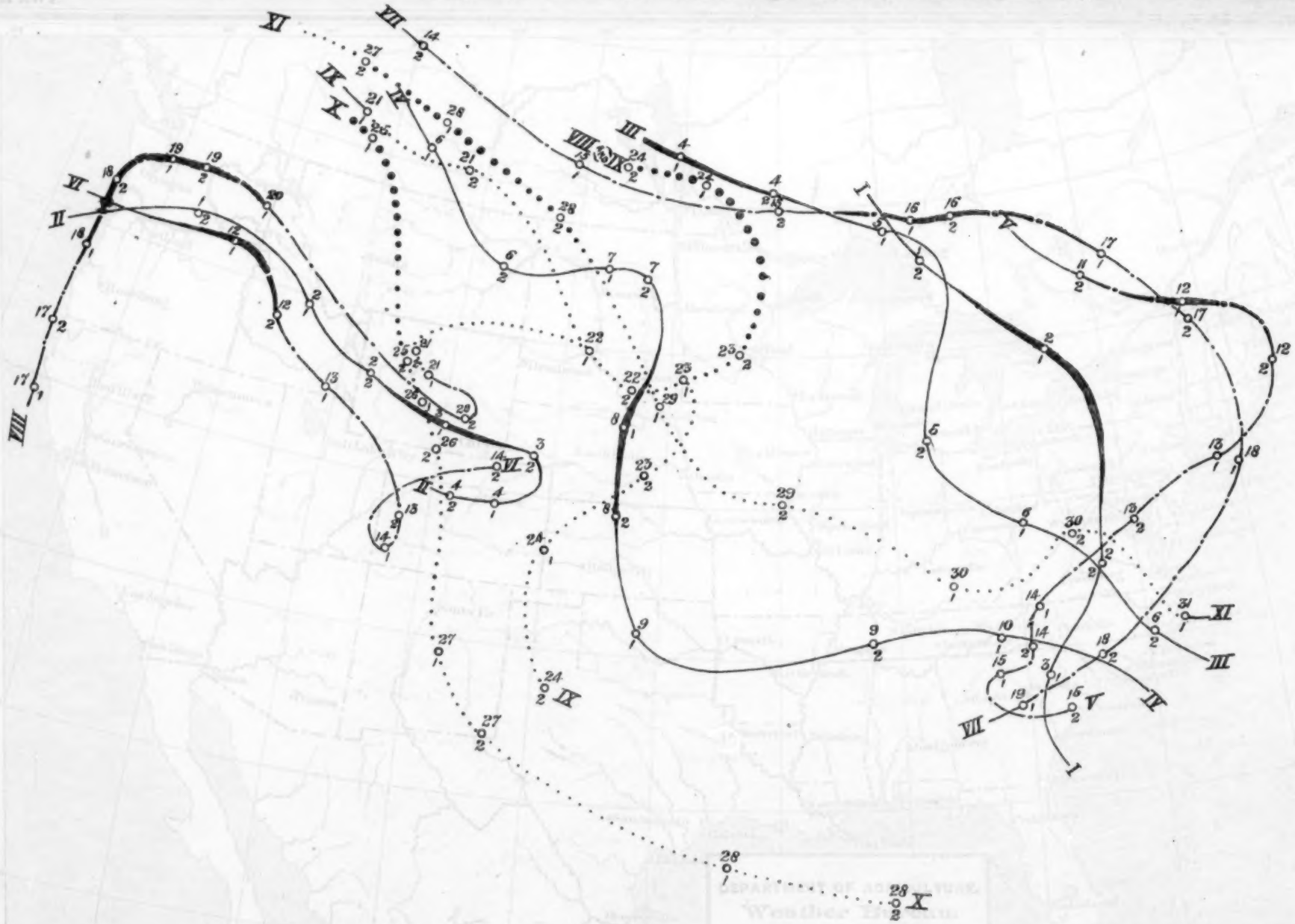


Chart IV. Tracks of areas of High Pressure. October, 1902.

Chart IV. Tracks of areas of High Pressure. October, 1892.



NOTES.

——— Tracks of first decade of month.
–·–·– Tracks of second decade of month.
····· Tracks from 21st to 31st, inclusive.

The heavy portion of tracks indicates where the highest pressure was observed.

Chart V. Depth of Snowfall (inches) and Limits of Freezing Weather, October, 1892.